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FOR THE YEAR 1922.

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TABLES: PART I—MEDICAL.

Table 4. (*page* 7.)—No. 13 (Class I) 1922. Males, *read* 8; Females, *read* 6.

(*page* 17.)—No. 129 (Class VII) 1922. Females. For 5,399 *read* 5,400.

,, —No. 131 (Class VII) 1922. Females. For 289 *read* 288.

(*page* 22.)—No. 195 (Class XIV) 1922. Males. For 6 *read* 4.

,, —No. 196 (Class XIV) 1922. Males. For 16 *read* 21.

Table 5. (*page* 32.)—No. 153 (2) (Class IX) 1917. Males. For 0 *read* 10.

(*page* 34.)—Nos. 172–174 (Class XIV) 1918. Persons, *read* 6.

Table 14. (*page* 92.)—Fordingbridge. Deaths under 1 year. Col. 13. For 12 *read* 4. Col. 14. For 101 *read* 34.

,, —Hartley Wintney. Deaths under 1 year. Col. 13. For 13 *read* 21. Col. 14. For 35 *read* 56.

Table 20. (*page* 365.)—In heading, for Aggregate of Rural Districts *read* Aggregate of Urban Districts, and for Aggregate of Urban Districts *read* Aggregate of Rural Districts.

Table 21. (*page* 372.) For All Causes, Males, Faringdon* (pt.) R.D. *read* 65.

TABLES: PART II—CIVIL.

Table E. (*page* 17.) Essex—Southend-on-Sea. Col. 3. Males. For 20 *read* 720.

Table W. (*page* 115.) 1920. British Islands. Deaths. For 1,849 *read* 2,106.

,, ,, Guernsey and adj. Islands. Deaths. For 330 *read* 587.

STATISTICAL REVIEW, 1922.

Note.—Of the tables referred to below, those numbered in Arabic will be found in "Tables, Part I—Medical," and those lettered in "Tables, Part II—Civil," while those numbered in Roman numerals appear in the text of this volume.

DEATHS.

The deaths of 486,780 persons were registered in England and Wales during 1922, 247,221 (viz., 246,670 civilians and 551 non-civilians) of these being males and 239,559 females.

Deaths of civilians, including all deaths of females and 99·78 per cent. of those of males are referred in tabulation to their administrative area of residence, and therefore figure in all tables relating to portions of the country. It has been found however that similar treatment cannot be satisfactorily applied to the deaths of non-civilians, which are therefore excluded from all tables relating to local areas. Table 17, accordingly, so far as it refers to England and Wales as a whole, includes all deaths registered, but when referring to the population as sub-divided by class of area, includes only deaths of civilians; and the same restriction to civilian mortality only applies to all tables embodying distinction of local area.

The 486,780 deaths correspond to a rate of 12·8 per 1,000 of the estimated population. When standardized* to correct for the deviation of the sex and age distribution of the population,

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* The term "standardized death-rate" means the death-rate corrected for differences of sex and age constitution of the population. For a description of two methods of effecting this "standardization" of recorded death-rates *see* the Annual Report for 1911 (pages xxvii-xxxi). Standardized death-rates for the sexes separately quoted in this review are based upon the age distribution of persons of undistinguished sex in the general population of England and Wales in 1901. (*See* Annual Report for 1913, page xx.)

as shown on page 114, from that of the standard population of 1901, this death-rate is reduced to 11·6. In Tables 1 and 3 it is stated as 11·9, the reason for the difference being that the age-group death-rates in Table 3, from which the standardized rate is derived, are based on estimates of the population at the various ages prepared before the results of the 1921 census had been tabulated. These estimates naturally required revision when the census data became available, with the result that most of the rates shown in Table 3 for 1921 and 1922 have also had to be revised, the general result of the revision required being expressed in the reduction of the standardized death-rate from 11·9 to 11·6 per thousand living.

As the population of this country in 1901 included relatively few infants and old people it forms a standard exceptionally favourable to low mortality. Its use for this purpose accordingly yields comparatively low standardized rates all round. In order to correct any wrong impression which might arise from this fact, and to provide standarized rates for this country comparable with those of countries using the standard recommended by the International Statistical Institute (a composite population made up of those of a large number of European countries in 1900 or 1901), rates calculated upon the latter are shown in Table XIV, as well as those based on the 1901 English standard, which is that always used elsewhere in this Review. It will be seen that use of the less favourable standard increased the rate from 11·6 to 12·7 per thousand.

Table 3 (Part I, page 6) shows that the revised rate of 11·6 is the lowest hitherto recorded except for that of 1921, which is reduced on post-censal revision from 11·5 to 11·3. Table 2 shows that in each of the two latter quarters of the year the mortality was the lowest as yet recorded for those quarters, this advantage being wiped out chiefly by a comparatively high rate, 17·6 per 1,000 living, for the first quarter. Table 18 shows that January was the month chiefly responsible for this comparatively heavy first quarter mortality, and that it chiefly involved the female sex. Of the total deaths of males in the year 13·1 per cent. occurred in January, and 13·9 per cent. of those of females.

The same table enables us to distinguish the causes of death chiefly responsible for this January excess, which from all causes amounted to about 25,000 deaths, as compared with one-twelfth of the year's total of 486,780. From this table it may be seen that influenza contributed much more largely than any other single cause to the January excess, 9,781 deaths from it occurring in that month out of a total of 21,498 in the whole year. The January proportion was thus 45·5 per cent. of the total, as against 8·3, if these deaths had been uniformly distributed over the year. Influenza, however, only accounts for some 8,000 out of the 25,000 January excess, and further scrutiny of the table shows

this excess to have been very widely spread over the causes of death, the January maximum applying to causes accounting in all for about 68 per cent. of the total deaths. Amongst the more important of these causes, i.e., those showing, after influenza, the greatest concentration of mortality upon January (expressed as the ratio of deaths in January per cent. of the year's total which in the case of equal monthly distribution of deaths throughout the year is of course 8·3, or $\frac{1}{12}$), are broncho-pneumonia 20·3, bronchitis 19·2, whooping cough 19·1, asthma 18·6, 'pneumonia' (undefined) 16·7, diphtheria 15·6, and scarlet fever 15·3. The excess for the respiratory diseases accords with general experience, and it may be presumed that the usual influence of season was in this instance accentuated by the heavy influenzal mortality during the month. It is the more surprising, therefore, that lobar pneumonia finds no place in the list of diseases most fatal in January, 1,163 deaths from it having occurred in April as against 1,152 in January. This excessive April mortality applies to males alone, most deaths of females occurring in January. Amongst other causes showing considerable January excess it is of some interest to find that a prominent place is taken by cerebral haemorrhage and similar forms of return, the January proportions per cent. of the year's total being—cerebral haemorrhage 10·5, apoplexy 11·1, cerebral embolism 11·0, cerebral thrombosis 11·2, and hemiplegia 11·9. The reason for this is not very obvious, but comparison with the quarterly records for previous years shows that it is probably a feature of old standing in our returns. During nine of the ten years 1911–20 deaths from cerebral haemorrhage, etc., were at a maximum in the first quarter of each year, the order by quarters being March, December, June, September for each sex in each of these years except 1917, when for each sex the order was March, June, December, September. In 1921 the maximum occurred in the March quarter, but in the December quarter for males. Most forms of heart disease show the January maximum, the total deaths from all forms (International list Nos. 87–90) during that month being 11·5 per cent. of the year's total. Table 30 shows that the temperature of the air during the first quarter of the year was above the average, and records published elsewhere show that this statement applies to most parts of the country, so the exceptional mortality of January is not to be accounted for by exceptional severity of the season.

Mortality of each sex.—Table 1 (Part I) shows that no previous year except 1921 has shown a lower mortality for either sex than 1922.

The standardized mortality of males regularly exceeds that of females. Up to 1860 or so the excess was only about 9 per cent., but for the 15 years ending with 1914 it averaged about 20 per cent.

Table I.—England and Wales : Mortality of Males of Various Ages per cent. of that of Females of Like Age.

—	All Ages (standardized).	0—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85 and upwards
1911–14	121	120	102	95	109	119	121	125	130	132	125	117	111
1921 ..	123	125	104	96	106	110	114	126	130	134	128	118	113
1922 ..	122	123	104	95	105	116	113	130	128	132	126	119	108

During the war this excess increased to a maximum of 39 per cent. in 1917, as a consequence of deterioration, by selective recruiting, of the male element in the civilian population, to which the mortalities compared necessarily refer in the absence of estimates for the total covering the war period.

The estimates made for this period of populations at various ages, which were largely based upon the returns derived from the National Register of 1915, have proved to accord so badly with the numbers returned at the same ages in the census of 1921 that these years have been omitted from Table I, which compares the mortality of males with that of females at various ages in the years 1911–14, 1921, and 1922. This table shows that the disturbance of the ratio of sex mortalities brought about by the war has now for the most part disappeared, there being no marked contrast at any age between the ratios for 1911–14 and for 1922. The figures to which attention was drawn in last year's Review, showing excess mortality of females at ages over 85, are now seen to have been quite illusory, having resulted from underestimation of the numbers of females at these ages, which of course had the effect of exaggerating their mortality.

Infant Mortality.

Of the 486,780 deaths registered during the year, 60,121, or 12·4 per cent., were those of infants under one year of age. This is the smallest proportion ever recorded in this country except during the years 1918 and 1919, when, owing mainly to reduction of the birth-rate by the war, it was 10·5 in 1918 and 12·2 in 1919. So recently as 1901–10 the proportion was 22·6 per cent.

The rate of infant mortality resulting from these deaths is 77 per 1,000 births. This rate is the lowest hitherto recorded in this country.

It was pointed out in the Report for 1920 that for that year the conventional measure appreciably understated this mortality, owing to the sudden rise of the birth-rate about the beginning of the year ; and a method was described for obtaining a more exact statement of infant mortality by stating the deaths as a proportion, not of the births registered in the same year, but of all the infants born during the same three months as those who

died (for births by quarters see Table D, and for deaths with details of age Table VIII). This correction increased the rate for 1920 from 80 to 84·5, the lowest for any previous year, calculated in the same way, being 91·1 in 1916 and 1917 (Table V). Since 1920 the birth-rate has again declined, with the result that the proportions of infant deaths to births in 1921 and 1922 somewhat overstate the mortality, as in other recent years of decreasing birth-rate, especially 1915 and 1917 (Table II, in which the corrected rates are shown in brackets). Correction for this reduces the rate for 1922 to 74·7, comparing with 81·2 in 1921, so the fall which commenced with the century now amounts to no less than 52 per cent. as compared with the rate of 156 for 1896–1900.

The fall as compared with 1921 is, however, seen from Table II to be entirely accounted for by diminution in mortality from diarrhœa, the corrected rate from this cause declining from 14 per 1,000 births in 1921, when the summer was hot and dry, to 5 in 1922, when just the opposite conditions prevailed. This is the lowest diarrhœal rate recorded for any year from 1870 onwards, comparing with previous low records of 8 in 1879 and in 1912, both, like 1922, years of cold and wet summers. On the other hand mortality from causes other than diarrhœa has increased from a corrected rate of 67 in 1921 to 70 in 1922.

Table II.—England and Wales : Infant Mortality, 1861–1922, distinguishing Mortality from Diarrhœal Diseases.

Deaths under 1 year of age per 1,000 Births.

	Diarrhœal Diseases.	Other Causes.	All Causes.		Diarrhœal Diseases.	Other Causes.	All Causes.		Diarrhœal Diseases.	Other Causes.	All Causes.
1861–65	15	136	151	1899	40	123	163	1911	36 (36)	94 (93)	130 (129)
1866–70	20	137	157	1900	28	126	154	1912	8 (8)	87 (87)	95 (95)
1871–75	19	134	153	1901	32	119	151	1913	19 (19)	89 (90)	108 (109)
1876–80	16	129	145	1902	15	118	133	1914	17 (17)	88 (87)	105 (104)
1881–85	14	125	139	1903	18	114	132	1915	15 (15)	95 (91)	110 (106)
1886–90	17	128	145	1904	30	115	145	1916	11 (10)	80 (81)	91 (91)
1891–95	20	131	151	1905	21	107	128	1917	10 (9)	86 (82)	96 (91)
1896–00	31	125	156	1906	31	101	132	1918	10 (10)	87 (88)	97 (98)
1901–05	23	115	138	1907	13	105	118	1919	9 (9)	80 (84)	89 (93)
1906–10	18	99	117	1908	20	100	120	1920	8 (9)	72 (76)	80 (85)
1911–15	19	91	110	1909	13	96	109	1921	14 (14)	69 (67)	83 (81)
1916–20	9	81	90	1910	13	92	105	1922	6 (5)	71 (70)	77 (75)

The most outstanding feature in Table II is the remarkable absence of all tendency to decline during the nineteenth century, as contrasted with the rapidity of the fall since its close.

It should not be assumed, however, as is sometimes done, that this is peculiarly an English phenomenon, and therefore one to be explained by conditions peculiar to this country. On the contrary, the returns of most other countries for which comparison can be made over a long series of years record a similar experience.

Table III.—Quinquennial Rates of Infant Mortality and Birth-rates in various Countries, from 1841–45 (or later) to 1916–20.

Infant Mortality.

	England and Wales.	Scotland.	Ireland.	Denmark.	Norway.	Sweden.	Finland.	Switzerland.	Austria.	Prussia.	Bavaria.	Saxony.	Holland.	Belgium.	France.	Italy.	Australia.	New Zealand.
1841–45	148	—	—	136	118	154	—	—	—	—	296	—	—	149	155	—	—	—
1846–50	157	—	—	148	112	153	—	—	—	—	299	—	190	152	162	—	—	—
1851–55	156	—	—	134	105	149	—	—	—	—	308	253	190	152	166	—	—	—
1856–60	152	119	—	136	101	143	—	—	244	—	313	256	205	158	179	—	—	—
1861–65	151	120	—	137	106	136	—	—	258	—	332	270	197	165	179	—	—	—
1866–70	157	122	95	132	113	142	212	—	254	—	321	264	201	142	177	—	—	—
1871–75	153	127	95	137	108	134	170	198	264	—	320	287	210	151	178	—	119	107
1876–80	145	118	99	139	101	126	163	188	249	205	298	278	197	155	166	209	121	96
1881–85	139	118	94	134	99	116	161	171	252	207	287	282	181	156	167	195	125	90
1886–90	145	121	95	136	96	105	144	159	248	208	280	282	175	163	166	195	119	84
1891–95	151	126	102	139	98	103	145	155	245	204	272	280	165	164	170	184	109	87
1896–1900	156	129	106	132	96	100	139	143	226	201	257	265	151	158	158	168	112	80
1901–05	138	120	98	119	81	91	131	134	216	190	240	246	136	148	139	167	97	75
1906–10	117	112	94	108	70	78	117	115	202	168	217	198	114	141	126	152	78	70
1911–15	110	113	91	97	67	72	110	99	193*	163	197	176	99	135	126†	139	70	54
1916–20	90	99	86	91	63	66	114	82	—	139	173	123	84	115	118†	152	65	49
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)

Birth-rate.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1841–45	32·3	—	—	30·1	30·4	31·3	35·5	—	39·6	38·6	34·4	39·2	34·4	32·1	28·1	—	—	—
1846–50	32·8	—	—	30·9	30·9	30·9	35·4	—	37·0	37·5	33·9	39·6	31·7	28·5	26·7	—	—	—
1851–55	33·9	—	—	32·0	32·5	31·8	36·3	—	36·5	37·1	32·6	38·3	33·3	28·8	26·1	—	—	—
1856–60	34·4	34·4	—	33·0	33·3	33·7	35·6	—	39·1	38·4	33·9	40·0	33·3	31·0	26·6	—	—	—
1861–65	35·1	35·1	—	30·8	31·9	33·2	37·0	—	38·9	38·7	35·6	40·3	35·4	31·1	26·7	—	42·3	38·2
1866–70	35·3	34·9	26·8	30·6	29·9	29·7	31·8	—	38·4	37·9	38·2	40·6	35·2	32·1	25·5	—	39·5	42·3
1871–75	35·5	35·0	27·2	30·8	30·2	30·7	37·0	30·3	40·9	38·8	40·1	42·3	36·1	32·2	25·3	36·7	36·8	39·9
1876–80	35·3	34·8	25·8	32·1	31·7	30·3	36·9	31·5	39·9	39·2	40·5	43·3	36·4	31·9	25·3	36·9	35·1	41·2
1881–85	33·5	33·3	23·9	32·3	31·1	29·4	35·5	28·9	38·5	37·4	37·6	41·9	34·8	30·7	24·7	37·8	35·2	36·3
1886–90	31·4	31·4	22·8	31·6	30·6	28·8	34·5	27·7	38·1	37·3	36·0	41·8	33·6	29·3	23·0	37·2	35·2	31·2
1891–95	30·5	30·5	23·0	30·2	30·3	27·5	31·8	27·8	41·0	37·0	36·3	39·9	32·9	28·9	22·4	35·9	32·4	27·7
1896–1900	29·3	30·0	23·3	30·0	30·3	26·9	32·7	28·6	36·7	36·5	36·7	39·0	32·1	28·9	21·9	34·0	27·7	25·7
1901–05	28·2	28·9	23·1	29·0	28·6	26·1	31·3	27·8	35·7	34·8	35·9	34·6	31·6	27·7	21·2	32·6	26·4	26·6
1906–10	26·3	27·6	23·4	28·2	26·4	25·4	30·9	26·0	33·7	32·3	33·1	29·7	29·6	24·7	19·9	32·7	26·7	27·1
1911–15	23·6	25·4	22·7	25·6	25·0	23·0	27·3	22·7	30·8*	27·0	27·6	23·5	27·4	21·1	17·4	31·2	27·8	26·0
1916–20	20·1	22·8	20·5	23·4	24·5	21·1	23·3	19·2	—	18·2	19·4	15·2	25·7	15·1	13·2	22·5	25·3	24·3

* 1911–13 only. † 87 Departments for 1911–13, 77 Departments for 1914–19 and 90 Departments for 1920.

Note.—These figures have been compiled from the Annual Reports of the Registrar-General, 'Annuaire International de Statistique,' 1916 et 1919, published by l'Office Permanent de l'Institut International de Statistique, 'Annuaire Statistique de la France,' 1922, 'Commonwealth Demography,' 1921 and previous years (Australian Commonwealth), and 'Statistics of the Dominion of New Zealand,' 1920, Vol. I, while the figures for the later periods for France, Italy, Belgium and Sweden have been obtained direct from the respective statistical bureaux.

Of eighteen countries, sixteen in Europe and two in Australasia, for which it has been possible to make comparison in Table III of quinquennial infant mortalities dating back to 1876–80 or earlier, no less than eleven resemble England and Wales in this respect. Of these Saxony, Austria (pre-war), France, Belgium, and Denmark commenced the present era of rapid decline in 1896–1900; while in England and Wales, Scotland, Ireland, the Australian Commonwealth, Norway, and Prussia 1901–05 was the first quinquennium (of the series ending in 5 and 0) to show any substantial fall. During the preceding half-century or more no significant fall is recorded for any of these countries, the movements being in all cases fluctuating and irregular.

Of the remaining seven countries two, Bavaria and Holland, resemble the above-mentioned eleven in recording a sudden and steady decline following upon a period of fluctuating or rising mortality; but in the case of Bavaria this dates from 1866–70 onwards, and in that of Holland from 1871–75.

The remaining five countries, Italy, Finland, Switzerland, Sweden, and New Zealand, exhibit almost uninterrupted decline throughout the whole period covered; but in three of these this does not commence until 1871–75, while in none except that of Sweden has it been possible to carry the comparison further back than 1866–70. The other four therefore may really resemble Bavaria and Holland in having experienced a sudden commencement of decline at some date during the latter half of the nineteenth century, but the Swedish quinquennial records show that in that country the fall has been substantial, and with two exceptions continuous, since 1806–10.

In view of these facts it is evident that the explanation required is one applying not to the circumstances of this country alone, but to those of the greater part of Europe, and probably indeed of the civilized world. The fall in the birth-rate, which has largely coincided in point of time with that in infant mortality, naturally suggests itself as one possible explanation. Child mortality in large families as a whole is very much greater than in small ones—so much so that the 1911 census returns showed that in some cases, the mother's marriage age and the duration of marriage being similar, the proportion of children lost to the largest families was four or five times as great as that to the smallest. It is to be expected, therefore, that the great recent decline of fertility, which is common to most of the civilized world, should be accompanied by a fall in infant mortality.

When the records of the eighteen countries mentioned are examined for parallelism of decline in birth-rate and infant mortality it is found that, on the whole, the two movements have largely coincided. In the case of seven, Denmark, Norway, Holland, Prussia, Saxony, Austria, and Finland, this coincidence has been practically complete; but in other cases, while the general tendency to parallelism of movement is clearly manifest over a considerable period of time taken as a whole, the two movements within these periods have differed so much, even to the extent of being occasionally in opposite directions, as to suggest

that other important factors than decline of fertility have been at work, and have even in certain cases for a time totally masked the influence of the latter upon infant mortality. Thus, in both England and Wales and in Scotland the birth-rate has been declining seriously since 1876-80, but infant mortality only since 1896-1900, considerable increase of the latter from 1881–85 to 1896-1900 having accompanied the decreasing birth-rate of that period. In Switzerland the experience for the same period was reversed. The birth-rate remained almost stationary from 1881–85 to 1901–05, but infant mortality fell by 22 per cent. during the same interval. And similarly, but at a later date, the birth-rates of both Australia and New Zealand remained stationary during the period 1896–1900 to 1911–15, while their infant mortalities were rapidly declining, by 38 per cent. in the case of the former and 33 in that of the latter. In France, again, the slow but on the whole steady decline of the birth-rate during the latter part of the nineteenth century was accompanied by a rising rather than a falling record of infant mortality, decline of the latter only setting in, as in so many other countries, after 1891–95. It would almost seem as if some new factor making for decreased mortality had come into operation in most of the countries studied at or about this period, though earlier in the case of some of them. If so, its effect has presumably been greatly reinforced by that of the declining birth-rate, which in many cases dates from about the same period. Thus, in the case of five out of the seven countries named as exhibiting almost complete parallelism for the two rates, the decline in both dates from the last decade of the last century. But Holland and Finland differ from the other five in recording more or less continuous decline of both rates from an earlier period, 1871–80. The difference in date appears to add to the significance of the parallelism in their case ; for however much this feature in the case of, for instance, Prussia, owes to the fact that its birth-rate commenced seriously to decline at the time when the infant mortality of most countries commenced to fall, this explanation cannot apply to Holland, whose rates have followed a quite different course, but in striking parallelism with each other.

The statistical evidence quoted appears, then, to show that decline of the birth-rate has been a very important factor in bringing about that of infant mortality ; but that other influences have been at work as well, and that these commenced to manifest themselves in most countries about the close of the nineteenth century, whether the birth-rate began to fall at the same time or earlier, though in rare cases some such factors, coming into play at an earlier time, sufficed to cause considerable fall of mortality during a period of stationary or increasing birth-rate. The only significant instances of this afforded by Table III are those of Bavaria and Switzerland from 1886–90 to 1901–05, the other instances of falling mortality without falling birth-rate—Ireland 1896-1900 to 1906–10, and Australia and New Zealand 1896–1900 to 1911–15, coinciding with the period of general mortality decline. The fact that so few cases can be quoted of decline in mortality

Table IV.—England and Wales : Age Distribution of Infant Mortality, 1881–1922.

———	Deaths per 1,000 Births registered.						Proportion of Deaths at each age.					
	Under 4 weeks.	4 Weeks to 3 months.	Total under 3 months.	3–6 months.	6–12 months.	Total under 1 year.	Under 4 weeks.	4 Weeks to 3 months.	Total under 3 months.	3–6 months.	6–12 months.	Total under 1 year.
1881–1885	—	—	67	28	44	139	—	—	484	199	317	1,000
1886–1890	—	—	69	30	46	145	—	—	480	204	316	1,000
1891–1895	—	—	74	31	46	151	—	—	488	207	305	1,000
1896–1900	—	—	74	34	48	156	—	—	477	215	308	1,000
1901–1905	—	—	70	28	40	138	—	—	505	202	293	1,000
1906–1910	40	23	63	22	32	117	344	194	538	188	274	1,000
1911–1915	39 (39)	20 (20)	59 (59)	20 (20)	31 (30)	110 (109)	356	185	541	180	279	1,000
1916–1920	37 (37)	17 (17)	54 (54)	14 (15)	22 (23)	90 (92)	412	183	595	160	245	1,000
1905	41	25	66	25	37	128	326	194	520	193	287	1,000
1906	41	26	67	27	38	132	317	194	511	203	286	1,000
1907	42	23	65	21	32	118	346	198	544	181	275	1,000
1908	40	24	64	24	32	120	335	200	535	196	269	1,000
1909	41	20	61	19	29	109	366	187	553	177	270	1,000
1910	38	20	58	19	28	105	365	190	555	178	267	1,000
1911	40 (40)	25 (25)	65 (65)	26 (26)	39 (38)	130 (129)	313	190	503	201	296	1,000
1912	38 (38)	18 (18)	56 (56)	15 (15)	24 (24)	95 (95)	405	186	591	156	253	1,000
1913	39 (40)	20 (20)	59 (60)	20 (20)	29 (29)	108 (109)	364	188	552	182	266	1,000
1914	39 (38)	19 (19)	58 (57)	19 (19)	28 (28)	105 (104)	368	185	553	179	268	1,000
1915	38 (38)	19 (19)	57 (57)	19 (18)	34 (31)	110 (106)	346	173	519	174	307	1,000
1916	37 (37)	17 (17)	54 (54)	15 (15)	22 (22)	91 (91)	404	185	589	166	245	1,000
1917	37 (37)	17 (17)	54 (54)	16 (15)	26 (22)	96 (91)	388	181	569	167	264	1,000
1918	36 (37)	17 (17)	53 (54)	16 (16)	28 (28)	97 (98)	376	175	551	163	286	1,000
1919	40 (41)	15 (16)	55 (57)	13 (14)	21 (22)	89 (93)	446	174	620	148	232	1,000
1920	35 (35)	16 (16)	51 (51)	12 (13)	17 (21)	80 (85)	441	196	637	156	207	1,000
1921	35 (35)	15 (15)	50 (50)	14 (14)	19 (17)	83 (81)	427	179	606	169	225	1,000
1922	34 (34)	13 (12)	47 (46)	11 (11)	19 (18)	77 (75)	442	165	607	143	250	1,000

without corresponding decline in birth-rate is very significant of the importance of the latter in the causation of the former.

The rate of fall in infant mortality has been very different in different portions of the first year of life. Table IV shows the mortality per 1,000 registered births at ages under three months, at 3–6, and 6–12 months, for the forty-two years 1881–1922, and the proportions of the total infant mortality occurring at each age, the corrected figures for the last twelve years being shown in brackets.

The mortality recorded in the table for each of the three subdivisions of the first six months of life there shown is lower than in any previous year, and the corrected rate for the second six months is lower than for any other year except 1921. Of special interest is the continued decline for the first four weeks of life, for this so-called " neo-natal " mortality, which has often been regarded as comparatively little subject to environmental influence, at least after birth, now exhibits a total decline in ten years of fifteen per cent., interrupted by an increase only in the very exceptional year 1919.

Table V. shows corrected mortalities at various ages for each quarter of each of the last twelve years. The figures for the third quarter of 1922 are in striking contrast with those of the previous year, showing to what an extent mortality at this time of year is even still dependent on the heat of the summer, though the similar contrast of ten years earlier date between the hot summer of 1911 and the cold one of 1912 shows how far this adverse influence has been overcome. At all ages distinguished in the table the corrected mortality of the third quarter of 1922 was the lowest yet recorded. This statement applies also to the fourth quarter, and, so far as the first six months of life are concerned, to the first as well. During the second quarter, however, mortality exceeded that of not only 1921, but of one or more earlier years at each age dealt with. Table 30 indicates no obvious meteorological explanation of this relatively unfavourable experience for the second quarter, but the average readings there shown are compounded from alternations first of cold and later of hot weather which may have had an adverse effect upon infant life. Comparison with 1921 shows that the causes of death chiefly responsible for the increased mortality of the second quarter of 1922 were measles and respiratory diseases, the death-rate from measles increasing from 0·84 per 1,000 births in the second quarter of 1921 to 2·22 in that of 1922 ; that from bronchitis from 3·73 to 7·90 ; and from pneumonia from 6·76 to 14·37. But though the total increase from these causes, 13·2 per 1,000 births, happens to be exactly the same as that of corrected mortality in general, it is only the excess of the latter over 1921 which has thus to be explained, for this excess is due rather to these rates for the second quarter of 1921 having been exceptionally low than to those for the same quarter of 1922 having been high. In the second quarter of 1920, for instance, their aggregate was only 2 per 1,000 births less than in that of 1922.

Table V.—England and Wales : Infant Deaths at various Ages during each Quarter of the Years 1911–22, per 1,000 corresponding Births.

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
	Under 4 Weeks.					4 Weeks—3 Months.					3–6 Months.				
1911	41.0	36.3	41.8	43.7	40.6	21.8	14.5	38.7	23.5	24.7	18.7	13.9	52.3	18.3	25.9
1912	43.8	37.4	34.5	38.1	38.4	24.5	14.8	14.2	17.5	17.7	19.2	12.7	12.4	15.1	14.9
1913	44.7	37.8	35.6	40.0	39.5	23.2	14.8	21.3	22.2	20.3	20.2	13.7	24.4	20.8	19.8
1914	43.0	37.6	34.4	39.2	38.5	21.8	14.7	21.8	19.0	19.3	19.7	13.1	24.4	17.7	18.7
1915	42.8	35.9	32.6	39.6	37.7	23.7	14.8	16.0	20.2	18.6	21.7	14.0	18.2	19.1	18.2
1916	41.4	35.4	31.7	39.5	36.9	20.2	13.8	13.9	19.9	16.9	17.7	12.5	14.4	16.1	15.2
1917	44.6	37.0	31.6	35.3	37.1	23.1	13.1	13.8	17.6	16.9	19.9	11.6	12.9	15.5	15.0
1918	38.0	34.0	33.3	41.0	36.6	22.3	14.3	15.2	17.0	17.1	19.2	11.9	15.8	17.6	16.1
1919	47.5	38.5	35.9	39.6	40.4	27.1	11.1	12.6	15.3	16.4	23.0	10.3	12.2	12.1	14.4
1920	38.4	35.4	30.8	35.7	35.0	21.7	14.8	10.9	15.0	15.5	18.1	12.4	8.8	12.7	13.0
1921	40.2	34.2	31.3	35.3	35.2	19.4	10.9	14.8	14.1	14.7	16.0	8.8	16.9	13.0	13.7
1922	37.8	35.1	29.0	33.8	33.9	15.3	13.9	8.9	11.6	12.4	14.1	11.8	6.3	10.2	10.6
	6–9 Months.					9–12 Months.					Total under one Year.				
1911	17.3	13.3	39.8	12.3	20.6	16.7	13.6	28.4	11.1	17.4	115.5	91.7	201.1	108.8	129.2
1912	15.0	12.1	9.7	12.9	12.5	12.9	11.1	8.7	12.8	11.4	115.3	88.0	79.5	96.5	94.7
1913	17.9	12.4	17.8	14.5	15.7	16.0	12.3	13.9	12.1	13.6	122.0	90.9	112.9	109.7	108.9
1914	16.2	12.2	18.9	12.7	15.0	13.6	11.8	14.6	11.9	13.0	114.3	89.1	114.0	100.5	104.4
1915	20.7	14.6	14.4	14.2	16.0	20.7	16.0	11.6	12.5	15.2	129.6	95.3	93.0	105.8	105.8
1916	14.5	11.4	10.3	10.6	11.7	13.3	10.7	7.9	8.9	10.3	107.2	84.0	78.2	95.1	91.1
1917	15.3	12.1	8.9	9.9	11.6	13.8	11.7	7.8	8.9	10.6	116.9	85.5	75.1	87.3	91.1
1918	17.2	12.2	11.4	16.7	14.4	15.9	13.1	10.2	15.3	13.7	112.6	85.8	85.8	107.7	97.9
1919	21.2	9.2	8.2	8.2	11.8	18.7	8.3	6.4	7.6	10.3	137.5	77.3	75.2	82.8	93.2
1920	16.4	12.2	6.9	8.3	11.0	14.7	12.5	5.5	6.9	10.0	109.3	87.4	63.0	78.7	84.5
1921	11.7	7.0	11.3	8.7	9.7	9.5	6.5	7.5	7.7	7.8	96.8	67.5	81.9	78.9	81.2
1922	14.3	10.5	5.0	7.0	9.2	13.4	9.4	4.6	6.7	8.6	94.9	80.7	53.8	69.3	74.7

Distribution of Mortality.—Table VI* shows how infant mortality was distributed in 1922 between the sexes and throughout the country.

Table VI.—Distribution of the Mortality of Infancy throughout England and Wales, 1922.

	Deaths under 1 year of age per 1,000 Births.														
	Males.					Females.					Both Sexes.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	84	—	84	—	—	65	—	65	—	—	75	—	75
County Boroughs ..	108	92	75	93	99	81	72	54	70	75	95	82	65	82	88
Other Urban Districts	99	75	62	96	83	75	57	47	75	64	87	66	55	86	74
Rural Districts ..	89	68	61	91	74	71	51	44	72	57	80	59	53	82	65
All Areas	103	79	74	94	87	78	61	56	73	66	91	70	65	84	77

Comparison of this table with that for 1920, which recorded the lowest rates hitherto returned for each class of area, shows that the reduction in 1922 for both sexes applies to town and country alike, the decrease varying from 1 per 1,000 births in London to 4 in the county boroughs. As compared with 1921 also the decrease for the county boroughs is 4, but rises to 5 for the rural districts, 6 for London and 7 for the smaller towns. The only entry in the table showing a higher mortality, for infants of both sexes, than that of 1921 is that for the rural districts of Wales, where the increase amounts to 2 per 1,000, while the rural districts of the North show the largest decrease, 10 per 1,000 births. It will be seen that the rates for the county boroughs and for the North are, as usual, in considerable excess, the highest rate in the table for infants of both sexes being 95 for the Northern

* The "North" includes the administrative counties and county boroughs corresponding to the registration counties in the eighth, ninth, and tenth "registration divisions" of the Registrar-General, *i.e.*, Lancashire, Cheshire, and Yorkshire, and counties north of them. The "South" includes England south of the Thames, with the whole of the County of London and the five south-western counties forming the first, second, and fifth registration divisions. "Wales" corresponds to the eleventh or Welsh registration division and so includes Monmouthshire. All the rest of the country corresponding to the third, fourth, sixth, and seventh registration divisions, is included in the Midland area. The counties in the four areas are as follows:—

North.	Midlands.		South.	Wales.
Cheshire.	Middlesex.	Gloucestershire.	London.	Monmouthshire.
Lancashire.	Herttordshire.	Herefordshire.	Surrey.	Glamorganshire.
Yorks, West Riding	Buckinghamshire.	Shropshire.	Kent.	Carmarthenshire.
,, East Riding.	Oxfordshire.	Staffordshire.	Sussex, East.	Pembrokeshire.
,, North Riding.	Northamptonshire.	Worcestershire.	,, West.	Cardiganshire.
Durham.	Soke of Peterborough.	Warwickshire.	Southampton.	Brecknockshire.
Northumberland.	Huntingdonshire.	Leicestershire.	Isle of Wight.	Radnorshire.
Cumberland.	Bedfordshire.	Rutlandshire.	Berkshire	Montgomeryshire.
Westmorland.	Cambridgeshire.	Lincolnshire,	Wiltshire.	Flintshire.
	Isle of Ely.	Parts of Holland.	Dorsetshire.	Denbighshire.
	Essex.	,, Kesteven.	Devonshire.	Merionethshire.
	Suffolk, East.	,, Lindsey.	Cornwall.	Carnarvonshire.
	,, West.	Nottinghamshire.	Somersetshire.	Anglesey.
	Norfolk.	Derbyshire.		

county boroughs, and the lowest 53 in the rural districts of the South. This maximum and minimum form one of the most constant features of the yearly records, those from 1911 onwards furnishing no exception, so far as the sexes jointly are concerned, to the rule of Northern county borough maximum and Southern rural district minimum. It may, however, be pointed out that the small towns of the South had in 1922 almost equalled the record of its rural districts, and that in 1923, with an infant mortality of 48 as against 49 for the Southern rural districts, they have for the first time displaced the latter from their position of primacy.

The rule of Northern county borough maximum and Southern rural district minimum also applies, with two slight exceptions for females only in 1912 and 1914, to each sex separately in each year 1911–1922.

Table 11 compares classes of administrative areas in respect of infant mortality, with distinction of age, cause and legitimacy. The total mortality in the urban areas as a whole exceeded that in the rural by 22 per cent. Table VII shows that this is about the usual excess, though some general tendency towards decrease during the last twelve years may be discerned. As usual the excess increases with age.

Table VII.—Infant Mortality in Urban Districts of all types per cent. of that in Rural Districts, 1911-22.

——	Under 4 Weeks.	4 Weeks–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 year.
1911	106	136	145	155	164	132
1912	103	123	141	145	157	122
1913	105	141	144	149	157	129
1914	106	138	150	143	149	128
1915	103	128	148	153	154	128
1916	102	133	150	151	156	125
1917	99	124	146	148	166	122
1918	104	134	152	147	158	128
1919	102	118	130	124	129	113
1920	102	134	151	153	164	124
1921	107	125	149	144	148	124
1922	102	122	140	155	174	122

A statement of infantile deaths and mortality for each administrative area in the country will be found in Table 14 ; while Table 13 supplements this information for each metropolitan and county borough, and for the urban and rural portion of each administrative county, by distinctions of age and legitimacy.

Mortality of Separate Weeks and Months of Age.—Tables VIII and IX continue the analysis of infant mortality by detail of age, initiated in 1905 with distinction of registration counties mainly urban and mainly rural, and expanded in 1917 to the

Table VIII.—Deaths under One Year by Week and Month of Age, 1922.

		Under 1 Day.	1–7 Days.	Weeks. 1–2	2–3	3–4	Months. Total under 4 Weeks	4 Weeks to 2 Months	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Total under 1 Year.
England and Wales.	All Infants	M	4,688	5,333	2,343	1,864	1,261	15,489	3,576	2,239	1,885	1,588	1,533	1,535	1,522	1,424	1,384	1,361	1,272	34,808
		F	3,439	3,700	1,683	1,342	929	11,093	2,432	1,644	1,335	1,213	1,054	1,045	1,086	1,129	1,091	1,083	1,108	25,313
		P	8,127	9,033	4,026	3,206	2,190	26,582	6,008	3,883	3,220	2,801	2,587	2,580	2,608	2,553	2,475	2,444	2,380	60,121
	Legitimate	M	4,257	5,001	2,154	1,732	1,161	14,305	3,283	2,033	1,688	1,446	1,427	1,407	1,423	1,321	1,294	1,291	1,194	32,112
		F	3,079	3,455	1,557	1,239	862	10,192	2,240	1,496	1,203	1,097	952	958	1,014	1,060	1,026	1,000	1,035	23,273
		P	7,336	8,456	3,711	2,971	2,023	24,497	5,523	3,529	2,891	2,543	2,379	2,365	2,437	2,381	2,320	2,291	2,229	55,385
	Illegitimate	M	431	332	189	132	100	1,184	293	206	197	142	106	128	99	103	90	70	78	2,696
		F	360	245	126	103	67	901	192	148	132	116	102	87	72	69	65	83	73	2,040
		P	791	577	315	235	167	2,085	485	354	329	258	208	215	171	172	155	153	151	4,736
All Areas.	North		3,157	3,537	1,663	1,389	901	10,647	2,382	1,568	1,328	1,193	1,130	1,163	1,161	1,134	1,056	1,076	1,042	24,880
	Midlands		2,458	2,775	1,135	941	652	7,961	1,741	1,103	904	790	705	669	673	693	664	630	626	17,159
	South		1,898	1,952	885	616	451	5,802	1,343	869	739	600	561	529	566	534	551	543	519	13,156
	Wales.		614	769	343	260	186	2,172	542	343	249	218	191	219	208	192	204	195	193	4,926
London			876	865	419	299	227	2,686	687	495	434	354	326	341	371	342	343	353	357	7,089
County Boroughs	North		1,695	1,902	931	774	516	5,818	1,427	929	789	687	665	702	648	656	660	667	637	14,285
	Midlands		927	934	444	350	258	2,913	744	488	364	359	341	315	290	317	338	308	302	7,079
	South		255	281	128	86	55	805	187	93	80	78	75	58	59	61	64	62	47	1,669
	Wales		104	132	74	48	30	388	92	76	47	55	34	50	49	49	39	40	41	960
	England and Wales ..		2,981	3,249	1,577	1,258	859	9,924	2,450	1,586	1,280	1,179	1,115	1,125	1,046	1,083	1,101	1,077	1,027	23,993
Other Urban Districts	North		1,008	1,136	533	446	272	3,395	692	470	394	375	341	338	384	361	288	317	294	7,649
	Midlands		889	1,082	430	366	235	3,002	616	395	342	281	222	213	246	244	227	215	226	6,229
	South		434	443	197	123	92	1,289	263	140	132	93	97	81	85	86	82	82	67	2,497
	Wales		312	405	163	132	97	1,109	272	160	138	108	105	114	119	98	121	109	104	2,557
	England and Wales ..		2,643	3,066	1,323	1,067	696	8,795	1,843	1,165	1,006	857	765	746	834	789	718	723	691	18,932
Rural Districts	North		454	499	199	169	113	1,434	263	169	145	131	124	123	129	117	108	92	111	2,946
	Midlands		642	759	261	225	159	2,046	381	220	198	150	142	141	137	132	99	107	98	3,851
	South		333	363	141	108	77	1,022	206	141	93	75	63	49	51	45	62	46	48	1,901
	Wales		198	232	106	80	59	675	178	107	64	55	52	55	40	45	44	46	48	1,409
	England and Wales ..		1,627	1,853	707	582	408	5,177	1,028	637	500	411	381	368	357	339	313	291	305	10,107
England and Wales	First Quarter		2,220	2,823	1,175	971	643	7,832	1,826	1,260	1,005	949	963	1,053	1,052	1,040	980	975	954	19,889
	Second ,, ...		2,122	2,304	1,083	904	637	7,050	1,742	1,106	912	797	701	698	724	736	734	668	678	16,546
	Third ,, ...		1,932	1,877	816	631	440	5,696	1,107	674	523	407	341	336	330	345	330	323	307	10,719
	Fourth ,, ...		1,853	2,029	952	700	470	6,004	1,333	843	780	648	582	493	502	432	431	478	441	12,967

Table IX.—Infant Mortality by Week and Month of Age, 1922.

		Proportion of Deaths to 1,000 Births.																
				Weeks.			Months.											
		Under 1 Day.	1–7 Days.	1–2	2–3	3–4	Total under 4 Weeks	4 Weeks to 2 Months.	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Total under 1 Year.
England and Wales.	All Infants M	11·73	13·34	5·87	4·67	3·16	38·77	8·95	5·61	4·72	3·97	3·84	3·85	3·81	3·56	3·47	3·41	3·18	87·14
	All Infants F	9·03	9·73	4·42	3·53	2·44	29·15	6·39	4·32	3·50	3·19	2·77	2·75	2·85	2·96	2·86	2·85	2·91	66·50
	All Infants P	10·42	11·58	5·16	4·11	2·81	34·08	7·71	4·97	4·13	3·59	3·31	3·31	3·34	3·27	3·18	3·13	3·05	77·07
	Legitimate M	11·14	13·10	5·64	4·53	3·04	37·45	8·59	5·32	4·42	3·78	3·74	3·68	3·72	3·46	3·39	3·38	3·12	84·05
	Legitimate F	8·46	9·49	4·28	3·40	2·37	28·00	6·16	4·11	3·31	3·01	2·62	2·63	2·79	2·91	2·82	2·75	2·84	63·95
	Legitimate P	9·83	11·35	4·97	3·98	2·71	32·84	7·40	4·73	3·87	3·41	3·19	3·17	3·27	3·19	3·11	3·07	2·99	74·24
	Illegitimate M	24·76	19·08	10·86	7·59	5·75	68·04	16·83	11·84	11·32	8·16	6·09	7·35	5·69	5·92	5·18	4·02	4·48	154·92
	Illegitimate F	21·51	14·64	7·53	6·15	4·00	53·83	11·48	8·84	7·89	6·93	6·09	5·20	4·30	4·12	3·88	4·97	4·36	121·89
	Illegitimate P	23·16	16·90	9·23	6·88	4·89	61·06	14·21	10·37	9·64	7·56	6·09	6·30	5·01	5·04	4·55	4·48	4·42	138·73
All Areas	North	11·49	12·88	6·05	5·06	3·28	38·76	8·68	5·72	4·83	4·34	4·11	4·23	4·22	4·13	3·85	3·92	3·79	90·58
All Areas	Midlands	10·03	11·32	4·63	3·84	2·66	32·48	7·10	4·50	3·69	3·22	2·88	2·73	2·75	2·83	2·71	2·57	2·56	70·02
All Areas	South	9·41	9·68	4·39	3·05	2·24	28·77	6·67	4·31	3·66	2·97	2·78	2·62	2·81	2·65	2·73	2·69	2·57	65·23
All Areas	Wales	10·46	13·10	5·84	4·43	3·17	37·00	9·24	5·84	4·24	3·71	3·25	3·73	3·54	3·27	3·47	3·32	3·29	83·90
London		9·24	9·13	4·42	3·15	2·39	28·33	7·25	5·22	4·58	3·73	3·44	3·60	3·91	3·61	3·62	3·72	3·77	74·78
County Boroughs	North	11·29	12·68	6·20	5·16	3·44	38·77	9·51	6·19	5·26	4·58	4·43	4·68	4·32	4·37	4·40	4·44	4·24	95·19
County Boroughs	Midlands	10·73	10·83	5·14	4·06	2·99	33·75	8·63	5·65	4·22	4·16	3·95	3·65	3·36	3·67	3·92	3·57	3·50	82·03
County Boroughs	South	9·89	10·90	4·97	3·34	2·13	31·23	7·25	3·61	3·10	3·03	2·91	2·25	2·29	2·37	2·48	2·41	1·82	64·75
County Boroughs	Wales	8·86	11·24	6·30	4·09	2·56	33·05	7·84	6·47	4·00	4·68	2·90	4·26	4·17	4·17	3·32	3·41	3·49	81·76
County Boroughs	England and Wales	10·88	11·86	5·76	4·59	3·14	36·23	8·95	5·79	4·68	4·30	4·07	4·11	3·82	3·95	4·02	3·93	3·75	87·60
Other Urban Districts	North	11·48	12·94	6·07	5·08	3·09	38·66	7·88	5·35	4·49	4·27	3·88	3·85	4·37	4·11	3·28	3·61	3·35	87·10
Other Urban Districts	Midlands	9·46	11·51	4·58	3·89	2·50	31·94	6·55	4·20	3·64	2·99	2·36	2·27	2·62	2·60	2·42	2·29	2·40	66·28
Other Urban Districts	South	9·56	9·76	4·34	2·71	2·03	28·40	5·79	3·08	2·91	2·05	2·14	1·78	1·87	1·89	1·81	1·81	1·48	55·01
Other Urban Districts	Wales	10·50	13·63	5·48	4·44	3·26	37·31	9·16	5·39	4·64	3·63	3·53	3·84	4·00	3·30	4·07	3·67	3·50	86·04
Other Urban Districts	England and Wales	10·29	11·93	5·15	4·15	2·71	34·23	7·18	4·53	3·91	3·34	2·98	2·90	3·25	3·07	2·80	2·81	2·69	73·69
Rural Districts	North	12·34	13·57	5·41	4·59	3·07	38·98	7·15	4·59	3·94	3·56	3·37	3·34	3·51	3·18	2·94	2·50	3·02	80·08
Rural Districts	Midlands	9·91	11·73	4·03	3·47	2·45	31·59	5·87	3·40	3·06	2·32	2·19	2·18	2·12	2·04	1·53	1·65	1·51	59·46
Rural Districts	South	9·32	10·16	3·95	3·02	2·16	28·61	5·77	3·95	2·60	2·10	1·76	1·37	1·43	1·26	1·74	1·29	1·34	53·22
Rural Districts	Wales	11·48	13·45	6·14	4·64	3·42	39·13	10·32	6·20	3·71	3·19	3·01	3·19	2·32	2·61	2·55	2·67	2·78	81·68
Rural Districts	England and Wales	10·53	11·99	4·58	3·77	2·64	33·51	6·65	4·12	3·23	2·66	2·47	2·39	2·31	2·19	2·03	1·88	1·97	65·41

degree of geographical distinction now in use. Distinctions of sex and legitimacy are shown only for England and Wales as a whole, but are available for each of the populations dealt with. Some of the facts and rates applying to the illegitimate will be found in Table 13.

Table IX, like its five predecessors, shows that the decrease of mortality from North to South is well marked from the very first day of life. The excess in the North over the Southern rate on this day was 22 per cent., the lowest excess for the six years open to comparison being 17 per cent. in 1917, and the highest 33 per cent. in 1920. In each of these years much the highest rate for the first day has been returned by the rural districts of the North.

As is usually the case, more deaths of illegitimate infants occurred on the first day than during the remainder of the first week, whereas with the legitimate this ratio is reversed. In this respect the ratio shown by London for all infants resembles that applying elsewhere to the illegitimate only, as it has done in six out of the twelve years 1911–22. In the case of London, however, this is due to a specially low rate in the second period (1–7 days), while in that of the illegitimate it is due to a specially high one on the first day of life. In last year's Review it was shown that the excess mortality of male over female infants, shown at every age period in Table IX, and in each of its predecessors since tabulation in this degree of age detail was begun in 1905, had increased concurrently with the fall in infant mortality during the present century, so it is of some interest to note at what age it is chiefly manifested. This proves to be about the end of the first month of life.

From the very first day of life the male excess is established in full measure, there having been only five out of the seventeen years 1906–22 in which the male excess for the first day did not exceed that for the first year of life. It is of some interest to note that these five are all included in the seven years 1916–22, the ratio of male to female mortality on the first day having remained stationary at about 30 per cent. excess, while that for the first year has steadily increased from 20–25 per cent. excess in 1905–14 to 31 per cent. in 1922.

During the eighteen years for which comparison can be made (seventeen only so far as the first week of life is concerned) the male excess has never been greatest on the first day, twice in the remainder of the first week, twice in the third week, six times in the fourth week, seven times in the second month, and once in the fourth, so the tendency to a maximum about the end of the first month is clearly established. During the second six months this male excess steadily declines, as may be seen from the following figures stating its average extent at each age distinguished for the eighteen years 1905–22.

Infant Mortality of Males, compared with that of Females taken as 100 in each case, at various ages during the years 1905-22 (1906-22 for ages under 7 days).

		Weeks.			Total under 4	4 weeks to 2	Months.										Total under
Under 1 day.	1–7 days	1– 2.	2– 3.	3– 4.	weeks.	months.	2– 3.	3– 4.	4– 5.	5– 6.	6– 7.	7– 8.	8– 9.	9– 10.	10– 11.	11– 12.	1 year.
129	131	128	131	133	130	134	127	123	121	125	122	120	116	115	113	109	125

From these average figures it will be seen that the excess mortality of males is almost fully manifest from the moment of birth, increasing very slightly to a maximum about the end of the first or beginning of the second month of life, after which it rapidly, and on the whole steadily, declines to comparatively small dimensions at the end of the first year. It will be convenient here to trace the course of this male excess somewhat beyond the bounds conventionally assigned to infant mortality.

During the second year of life the same change in sex ratio of mortality continues, though with much less regularity—the difference in this respect being, no doubt, partly due to the very much smaller number of deaths concerned. The following statement is based upon 89,896 deaths in the second year of life registered during the five years 1918–22.

Mortality of Males (per 1,000 population aged 1-2 years), compared with that of Females taken as 100 in each case, in each month of the second year of life during the years 1918-1922.

Age in Months.												
12–13	13–14	14–15	15–16	16–17	17–18	18–19	19–20	20–21	21–22	22–23	23–24	12–24
110	111	114	109	108	111	104	108	110	104	104	96	108

Despite irregularities greater than might have been expected the general tendency to continued fall in the proportion is clearly marked, especially as the end of the year approaches. Probably, however, the drop in the 24th month overstates the change at this period, for it appears to be inconsistent with the records for the three succeeding years of life 2–5.

These consistently show some excess mortality for males during the third year, and practical equality during the fourth and fifth, but with some tendency towards establishment of female excess in the latter year, as during the succeeding decennium.

Mortality of Males per cent. of that of Females aged

	2–3 years.	3–4 years.	4–5 years.
1906–10 ..	106 ..	101 ..	98·5
1901–10 ..	104 ..	100 ..	99
1911–20 ..	104 ..	101 ..	100

The proportions quoted for 1906–10 are derived from Table XIX of the Decennial Supplement for 1901–10, Part III, in which the rates given are per 1,000 survivors at the commencement of each year ; those for 1901–10 from rates based on the mean decennial population in the same report ; and those for 1911–20 from rates based on the mean of the numbers enumerated in 1911 and in 1921. Whatever liability to error and inconsistency these different methods of calculation entail must be shared in approximately equal degree by both sexes, and so may be disregarded. The stability of the sex ratios for the three periods examined is striking.

The comparisons suggested by Table IX are facilitated by Table X, which, with certain condensation of ages, states the rates recorded for the various populations as ratios to those for England and Wales as a whole, and thus serves to analyse by age the comparison made in Table VI for the first year of life as a whole.

The facts brought out in this table may be considered from three points of view according as they measure at each age the excess mortality (1) of males over females, (2) of the towns over the rural districts, and (3) of the North over the South of England.

(1) The excess mortality of males naturally conforms to the type already deduced from the records of the last eighteen years. The maximum occurred, in 1922, in the second month of life.

(2) The excess mortality of the towns is little marked on the first day, but becomes rapidly established thereafter, and continues to increase throughout the year, reaching a maximum in the last three months as tested by comparison of the county boroughs with the rural districts. This comparison differs somewhat from that provided by Table VII, on account of the peculiar age incidence of mortality on London infants. For the first week the London rates are the lowest returned in Table X, as happened also in 1920 and 1921. After the first month this advantage is rapidly lost, the comparison of London with England and Wales becoming steadily more

Table X.—Infant Mortality at various Ages, in different classes of Area and Sections of the Country, per cent. of that of all Infants of the same Age in England and Wales, 1922.

		Under 1 day.	1–7 days.	1–2 weeks.	2–3 weeks.	3–4 weeks.	Under 4 weeks.	4 weeks –2 months.	2–3 months.	3–6 months.	6–9 months.	9–12 months.	Total under 1 Year.
All Areas													
England and Wales ..	P	100	100	100	100	100	100	100	100	100	100	100	100
	M	113	115	114	114	112	114	116	113	114	113	107	113
	F	87	84	86	86	87	86	83	87	86	86	92	86
North		110	111	117	123	117	114	113	115	120	127	124	118
Midlands		96	98	90	93	95	95	92	91	89	84	84	91
South		90	84	85	74	80	84	87	87	85	81	85	85
Wales		100	113	113	108	113	109	120	118	102	106	108	109
London		89	79	86	77	85	83	94	105	107	112	119	97
County Boroughs—													
England and Wales ..		104	102	112	112	112	106	116	116	118	120	125	114
North		108	109	120	126	122	114	123	125	129	135	140	124
Midlands		103	94	100	99	106	99	112	114	112	108	117	106
South		95	94	96	81	76	92	94	73	82	70	72	84
Wales		85	97	122	100	91	97	102	130	105	127	109	106
Other Urban Districts—													
England and Wales ..		99	103	100	101	96	100	93	91	93	93	89	96
North		110	112	118	124	110	113	102	108	115	124	109	113
Midlands		91	99	89	95	89	94	85	85	82	76	76	86
South		92	84	84	66	72	83	75	62	64	56	54	71
Wales		101	118	106	108	116	109	119	108	107	112	120	112
Rural Districts—													
England and Wales ..		101	104	89	92	94	98	86	83	76	69	63	85
North		118	117	105	112	109	114	93	92	99	101	90	104
Midlands		95	101	78	84	87	93	76	68	69	64	50	77
South		89	88	77	73	77	84	75	79	59	41	47	69
Wales		110	116	119	113	122	115	134	125	90	82	85	106

unfavourable as the first year of life progresses. This is a regular feature of London mortality, its disturbance in 1921 by high London diarrhœal mortality at 3–6 months having disappeared in 1922.

(3) The excess mortality of the North over the South is greater than that of the county boroughs over the rural districts, amounting for the whole twelve months to 39 as against 34 per cent. It is, as already noted, strongly marked from the very first day of life, when it amounts to 22 per cent., reaching 35 per cent. for the first four weeks, when that for the county boroughs over rural districts is only 8 per cent., and a maximum of 57 per cent. in the third trimester as against 98 per cent. excess for the county boroughs over the rural districts in the fourth. The Northern excess is thus much more uniform as well as greater than the urban. The Midlands are as a rule intermediate in position between North and South, but at 9–12 months their mortality was slightly below that of the South. Wales ranks, as in regard to many other matters, between the North and the Midlands. The constancy as well as the degree of the decrease in mortality from North to South is very great. When the comparison is made between districts of similar class in each case exceptions to the rule are few and unimportant, as has been the case also in each of the previous five years. There is no exception in any class of area at any age period distinguished in Table X to the Northern maximum, so far as England is concerned.

Causes of Infant Mortality.—The causes of infant mortality are set forth in Tables 8–12, which compare the records of 1922 with those of previous years, and show the incidence of mortality from each cause upon infants distinguished by sex, age, legitimacy, class of area, and section of the country. From these tables has been prepared the comparison in Table XI between the mortality from the chief causes distinguished at various ages in 1922, 1921, and 1917–21. It will be seen that the fall of infant mortality in 1922, 8 per cent. as compared with that of the previous year when the revised rates are compared, is very largely restricted to ages one to six months, and that at 9–12 months both crude and revised rates show an appreciable increase. Comparison with the average for the previous five years, on the other hand, shows a substantial decrease at all ages, but much more for the second six months when the revised rates are compared. The understatement by the crude rates of the reduction which has occurred at these ages should be borne in mind when studying the differences from the five year average under the separate cause headings, for which crude rates only are available.

Dealing first with the comparison with the preceding quinquennium, as best representing the general movement in progress, we find a substantial reduction of mortality at all ages, even in

Table XI.—England and Wales : Comparison of Infant Mortality Rates in 1922 with those of recently preceding years.

	Age.					
	Under 4 weeks.	4 weeks to 3 months.	3–6 months.	6–9 months.	9–12 months.	Under 1 year.
	Increase or Decrease of Mortality in 1922, per cent. of that in 1921.					
Crude	− 3	−15	−21	− 1	+ 9	− 7
Revised.. ..	− 4	−15	−23	− 4	+10	− 8
	Increase or Decrease of Mortality in 1922, per cent. of that in 1917–21.					
Crude	− 7	−21	−22	−12	− 6	−13
Revised.. ..	− 8	−23	−27	−21	−18	−17
	Increase or Decrease from various Causes, as compared with 1917–21					
Measles (7)	− 0·01	− 0·02	+ 0·01	—	—	− 0·02
Whooping Cough (9)	—	+ 0·05	+ 0·17	+ 0·14	+ 0·17	+ 0·53
Other common infectious diseases (6, 8, 10, 25 : 2).	+ 0·01	+ 0·01	+ 0·01	− 0·01	− 0·01	+ 0·01
Influenza (11)	+ 0·01	− 0·01	− 0·03	− 0·08	− 0·03	− 0·14
Tuberculous diseases (31–37).. ..	− 0·01	− 0·09	− 0·15	− 0·09	− 0·08	− 0·42
Convulsions (80)	− 0·46	− 0·48	− 0·39	− 0·22	− 0·15	− 1·70
Bronchitis and pneumonia (99–101)	+ 0·05	− 0·19	− 0·24	+ 0·23	+ 0·21	+ 0·06
Diarrhœa and enteritis (113) ..	− 0·16	− 1·16	− 1·65	− 0·94	− 0·60	− 4·51
Congenital defects (malformations and atelectasis) (159, 162 : 2).	+ 0·17	+ 0·04	—	+ 0·03	− 0·02	+ 0·22
Congenital debility, sclerema and icterus (160).	− 1·22	− 0·82	− 0·49	− 0·17	− 0·04	− 2·74
Premature birth (161 : 1)	− 0·74	− 0·07	—	+ 0·01	—	− 0·80
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	− 1·79	− 0·85	− 0·49	− 0·13	− 0·06	− 3·32
Suffocation—in bed or not stated how (180 part).	− 0·06	− 0·06	− 0·04	− 0·01	− 0·01	− 0·18
Other causes	− 0·17	− 0·51	− 0·33	− 0·24	− 0·08	− 1·33
All causes	− 2·59	− 3·31	− 3·13	− 1·35	− 0·64	−11·02
	Percentage.					
Measles (7)	− 50	− 40	+ 9	—	—	− 1
Whooping Cough (9)	—	+ 9	+ 26	+ 19	+ 22	+ 19
Other common infectious diseases (6, 8, 10, 25 : 2).	+100	+ 50	+ 25	− 10	− 7	+ 3
Influenza (11)	+ 14	− 6	− 9	− 19	− 8	− 10
Tuberculous diseases (31–37) ..	− 33	− 41	− 30	− 17	− 15	− 23
Convulsions (80)	− 18	− 34	− 38	− 32	− 29	− 27
Bronchitis and pneumonia (99–101)..	+ 3	− 5	− 6	+ 5	+ 5	+ 0
Diarrhœa and enteritis (113) ..	− 18	− 45	− 48	− 49	− 47	− 45
Congenital defects (malformations and atelectasis) (159, 162 : 2)	+ 4	+ 5	—	+ 19	− 20	+ 4
Congenital debility, sclerema and icterus (160).	− 22	− 36	− 40	− 41	− 22	− 28
Premature birth (161 : 1)	− 4	− 4	—	+ 33	—	− 4
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	− 7	− 18	− 27	− 22	− 21	− 10
Suffocation—in bed or not stated how (180 part).	− 18	− 25	− 31	− 25	−100	− 24
Other causes	− 4	− 24	− 18	− 17	− 7	− 13
All causes	− 7	− 21	− 22	− 12	− 6	− 13

the first four weeks, and from most causes, whooping cough being the chief exception. The chief decreases are from diarrhœa and enteritis (4·5 per 1,000 births) and from congenital debility and icterus (2·7), these two causes contributing jointly two-thirds of the total reduction of 11. This being so it is interesting to note that the first of these causes is typical of those subject to environmental, and the second typical of those subject to prenatal influences, so that a notable gain is recorded in both the directions to which we must look for decrease of infant mortality. Of the other causal decreases recorded that for convulsions (1·7 or 27 per cent.) is no doubt largely due to continued increase in precision of nomenclature. That from premature birth (·8 or 4 per cent.) represents a definite and welcome decrease of this comparatively stable rate, and accounts for 29 per cent. of the total decrease in the first four weeks, to which congenital debility is much the most important contributor, convulsions occupying third place. The two latter headings are so much influenced by increasing precision in certification that it is difficult to define the causes of death chiefly responsible for the decrease of the mortality at this age; but it may be noted that 69 per cent. of the total fall of 8 per cent. (revised rates) at this age is attributed to the group of causes described as "developmental and wasting diseases," to which 75 per cent. of the total mortality at this age in 1922 was ascribed (Table 10). The only cause from which any appreciable increase of mortality at this age is recorded is congenital defects, and even from it the increase amounts only to 4 per cent. Table 9 shows that its mortality for 1922, 5·77 deaths under twelve months per 1,000 births, was only twice exceeded, in 1915 and 1917, during the preceding ten years.

The percentage decline is greatest, at almost all ages, from diarrhœa and enteritis, as to which the experience of the year has already been seen to have been exceptionally favourable. Next to this decline and to those from congenitial debility and convulsions comes the fall in mortality from suffocation in bed, etc., which is considerable at all stages of infancy, and amounts to 24 per cent. for the whole of the first year of life. This heading includes 443 of the 481 deaths allocated to the international heading No. 180 "accidental mechanical suffocation." As pointed out in the Review for 1921, where the significance of the movement was discussed, decline of mortality attributed to this cause set in suddenly in 1915 (Table 9) after having remained steady for 30 years. In 1921, however, the customary excess for London and the South had practically disappeared, whereas Table 12 shows that in 1922 the pre-eminence of the South, though not of London, has been re-established. The only cause showing any considerable increase over the five year average is whooping cough, mortality from which obviously depends more upon the epidemic history of the year than upon infant hygiene.

Table 9 shows that the total fall of 5·7 deaths per 1,000 births as compared with 1921 occurred notwithstanding considerable increases from measles (mortality from which was unprecedently low in 1921), whooping cough, and influenza, and, presumably in consequence of these increases, from bronchitis and pneumonia. In view of these adverse circumstances the substantial reduction achieved in mortality from all causes is the more gratifying, though even in combination these increases are more than counterbalanced by the fall in diarrhœal mortality. Mortality from measles increased by 152, and from influenza by 140 per cent. The reduction of 3 per cent. in the mortality of the first four weeks of life is mainly accounted for by falls from (in order of importance) premature birth, diarrhœa and enteritis, congenital debility, and convulsions, partly set off by increases from bronchitis and pneumonia and from congenital malformations. The rapid decline in mortality attributed to tuberculous diseases discussed at some length in the Review for 1921, has been continued in 1922, Table 9 showing that the total rate of 1·39 per 1,000 births is the lowest yet recorded, and that only five years earlier this rate was twice as great. The decline applies to each of the forms of tuberculosis distinguished in the table, the mortality from intestinal and peritoneal and from miscellaneous tubercle in 1922 being the lowest yet recorded, and that from the meningeal form being also lowest except for 1920, when the record was the same. The same table shows that the mortality (31·4) from developmental and wasting diseases was lower than in any of the preceding ten years. This fall is mainly accounted for by congenital debility, the mortality ascribed to this cause having been halved during the past ten years. Little change is recorded for the most important of the developmental causes, premature birth, while from birth injury and congenital malformations, also included in the developmental group, mortality tends rather to increase. Another cause of increased mortality is pneumonia, with the highest rate since 1918, the year of the great influenza epidemic. For this, however, the prevalence of measles and whooping cough, particularly, so far as measles is concerned, during the second quarter of the year, has been seen to be probably responsible. The fall which commenced in 1918 in mortality from syphilis has made further progress, while the exceptional fall in that from inflammation of the stomach may be associated with the low rate of diarrhœal mortality.

Table XII, which contrasts the mortality of male with that of female and of legitimate with that of illegitimate infants, shows how the exceptional excess of 31 per cent. in mortality of males in 1922, already noted on page 17, was distributed by age and cause. The changes in the sex ratios at different ages in this table correspond closely, it will be seen, with those quoted on page 18 for the average of the past eighteen years. The male excess is shared, as usual, by all the principal causes of death quoted except whooping cough, its extent varying from 15 per cent. in the case of measles to 48 in that of diarrhœa.

Table XII.—England and Wales, 1922 : Infant Mortality by Sex and Legitimacy.

		Deaths per 1,000 Births.						Mortality per cent.				
		All Infants.		Legitimate Infants.		Illegitimate Infants.		Male of Female Infants.			Illegitimate of Legitimate Infants.	
		Male.	Female.	Male.	Female.	Male.	Female.	All Infants.	Legitimate.	Illegitimate.	Male.	Female.
All causes.	Under four weeks	38·77	29·15	37·45	28·00	68·04	53·83	133	134	126	182	192
	4 weeks—3 months	14·56	10·71	13·91	10·27	28·67	20·32	136	135	141	206	198
	3–6 months	12·53	9·46	11·94	8·94	25·57	20·91	132	134	122	214	234
	6–9 ,, ...	11·22	8·56	10·86	8·33	18·96	13·62	131	130	139	175	164
	9–12 ,, ...	10·06	8·62	9·89	8·41	13·68	13·21	117	118	104	138	157
	Total under 1 year	**87·14**	**66·50**	**84·05**	**63·95**	**154·92**	**121·89**	**131**	**131**	**127**	**184**	**191**
All ages under one year.	Measles (7)	1·67	1·45	1·56	1·40	4·08	2·51	115	111	163	262	179
	Whooping cough (9)	3·23	3·50	3·16	3·45	4·60	4·48	92	92	103	146	130
	Other common infectious diseases (6, 8, 10, 25 : 2)	0·40	0·25	0·40	0·24	0·57	0·60	160	167	95	143	250
	Tuberculous diseases (31–37) ..	1·57	1·23	1·49	1·22	3·28	1·44	128	122	228	220	118
	Syphilis (38)	1·25	0·98	0·99	0·75	7·01	6·03	128	132	116	708	804
	Convulsions (80)	5·27	3·76	5·14	3·64	8·33	6·45	140	141	129	162	177
	Bronchitis and pneumonia (99–101) ..	20·60	15·41	20·28	15·13	27·64	21·69	134	134	127	136	143
	Diarrhœa and enteritis (113) ..	6·62	4·48	6·26	4·12	14·42	12·31	148	152	117	230	299
	Congenital defects (malformations and atelectasis) (159, 162 : 2).	6·39	5·13	6·34	5·04	7·53	7·17	125	126	105	119	142
	Congenital debility, sclerema and icterus (160).	8·07	5·79	7·52	5·41	20·17	14·16	139	139	142	268	262
	Premature birth (161 : 1)	20·74	16·51	20·19	16·09	32·93	25·69	126	125	128	163	160
	Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	35·20	27·43	34·05	26·54	60·63	47·02	128	128	129	178	177
	Other causes	11·33	8·01	10·72	7·46	24·36	19·36	141	144	126	227	260
	All causes	**87·14**	**66·50**	**84·05**	**63·95**	**154·92**	**121·89**	**131**	**131**	**127**	**184**	**191**

As is regularly the case, the excess mortality of males was greater for legitimate than for illegitimate infants—31 per cent. for the legitimate as against 27 for the illegitimate (Table XII). This has been so in at least each of the last 17 years, including the 12 years 1911–22, the records of which have been utilized for the purposes of the following comparisons of the mortality of legitimate and illegitimate male and female infants. The excess mortality of males is greater for the legitimate because excess for the illegitimate is greater for females in each of these years. These statements apply to total mortality, also to that from the following causes distinguished in Table XII, in the following numbers of years—diarrhœa, bronchitis and pneumonia, and syphilis, 11 each, premature birth 9, convulsions 8, and congenital debility and tuberculosis 7 each. The mortality of males exceeds that of females for the legitimate and the illegitimate alike. This statement holds good in each of the twelve years dealt with for each of the causes distinguished in Table XII, except whooping cough and measles. The well-known excess mortality of females from whooping cough applies to legitimate infants in each of the twelve years, and to the illegitimate in eight of these years. Measles shows no exception for the legitimate to the general rule of male excess in any of the twelve years, but the mortality of females was in excess for the illegitimate in three of these years. The general tendency is thus towards heavier relative mortality of females amongst illegitimate infants. Although in their case also the mortality of males is greater, it is not so much greater as for the legitimate.

These facts leave the impression that female illegitimate infants are permitted—or encouraged—to die in greater proportion than male illegitimates. If this is so, the fact may be compared with the custom of female infanticide in certain countries. The causes chiefly responsible for this result are seen to be diarrhœa, respiratory disease, syphilis, premature birth, and convulsions, and the order of these is at least consistent with the supposition that the care bestowed upon illegitimate infants is somewhat less in the case of females than of males. The excess in mortality of male infants shown in Table XII of 31 per cent. is the largest yet recorded, the highest previous excess having been 29·9 per cent. in 1920. It was shown in last year's Review that this excess, previously constant at about 21–22 per cent., has risen concurrently with the decline of infant mortality during the present century, and that this experience has been shared by other European countries. Further increase of the male excess, therefore, corresponding with further decrease of mortality, is in entire accordance with the general rule deduced from previous experience.

Distribution throughout the country of Mortality from various causes.—Table XIII, which is derived from Table 12, furnishes an analysis by cause of the differences in total mortality under one year of age shown in Table VI. Table 12 having been first prepared for 1917, the results for five years only are available for comparison.

The greatest departures from the average mortality of the whole country in these tables are furnished by the county boroughs of the North, with excesses under nearly every cause distinguished, aggregating to 18·12 deaths per 1,000 births, and by the rural and urban districts of the South and rural districts of the Midlands, which hold advantages under nearly every head aggregating to 23·85, 22·06, and 17·61 per 1,000 births respectively. In 1921 the same statements applied with variation only of the amount of difference.

In the county boroughs of the North and the rural districts of the Midlands the first place in order of numerical importance amongst the causes of death accounting for the differences is occupied by bronchitis and pneumonia and the second by diarrhœa, in accordance with the general experience of the years 1917–21. In both the urban and the rural districts of the South, however, second place is taken by premature birth, bronchitis and pneumonia again coming first.

The details of this table are so similar to those of its five predecessors, as noted and commented upon in previous reports, that little further reference to them is here required. The characteristic feature of the year, low diarrhœal mortality, is seen to apply chiefly to the South outside London, the rate for London being 12 per cent. in excess of that for England and Wales, whereas for the county boroughs of the South the rate from this cause was 37 per cent. below average, for its smaller towns 50 per cent., and for its rural districts 46 per cent. The highest diarrhœal rate was that for the county boroughs of the North, 44 per cent. above average. The largest absolute differences are those in regard to bronchitis and pneumonia, as regards which the rural districts, with their purer air and smaller liability to infection, especially marked in the case of measles, hold a special advantage over the towns in all parts of the country. Here again, however, the South holds a great advantage, even its county boroughs returning a mortality 27 per cent. below that for England and Wales, whereas that for the Northern county boroughs is 38 per cent. in excess. Smaller mortality from premature birth forms another important element in the general advantage held by the South. Even in London this mortality is 14 per cent. below that for the country as a whole ; in the smaller towns and in the rural districts of the South it is 16 per cent., and in the South generally 13 per cent. below the rate for England and Wales. The low mortality from this cause in London, which is a regular feature of Table 12, requires, for its adequate appreciation, to be contrasted with the relatively high rates returned by the county boroughs of each section of the country, especially, of course, the North. It may be noted that the relative diminution, referred to in last year's Review, of the excess mortality of the South from overlying, has not been continued in 1922, though so far as London is concerned it is maintained. In 1917 the percentage excesses for this cause of death were 39 for the South and 86 for London.

Table XIII.—Comparison of Infant Mortality from the Principal Causes in Various Areas, 1922.

		Measles (7).	Whooping Cough (9).	Other Common Infectious Diseases (6, 8, 10, 25 : 2).	Tuberculosis, all forms (31–37).	Syphilis (38).	Convulsions (80).	Bronchitis and Pneumonia (99–101).	Diarrhœa and Enteritis (113).	Congenital Malformations (159).	Congenital Debility and Sclerema (160 : 1).	Premature Birth (161 : 1).	Injury at Birth (161 : 2).	Suffocation—in bed, or not stated how (180 pt).	Other Causes.	All Causes.
		Differences from Rates for England and Wales per 100,000 Births.														
All Areas	North	+ 68	− 26	+ 1	+37	+42	+135	+433	+149	+ 9	+105	+208	+15	+ 4	+171	+1351
	Midlands	− 74	+ 37	− 7	−20	−24	−101	−228	− 94	−10	− 23	− 12	−13	−14	−122	− 705
	South	+ 27	− 17	+ 8	−13	−19	−208	−333	−102	−17	−145	−247	− 7	+16	−127	−1184
	Wales	− 98	+ 23	− 2	−32	−29	+496	+ 67	+ 48	+58	+ 97	− 80	+ 3	−20	+152	+ 683
London		+174	+56	+40	+ 5	+ 1	−259	+198	+ 69	−25	−137	−258	−24	+ 8	− 77	− 229
County Boroughs	North	+129	− 37	+10	+34	+91	+108	+678	+247	+14	+ 54	+240	+16	+21	+207	+1812
	Midlands	− 7	+133	+ 1	+10	+15	−103	+324	+ 85	+ 8	+ 9	+ 98	−26	− 9	− 42	+ 496
	South	− 75	−111	−17	+67	+ 4	−155	−488	−204	+20	−206	− 25	+34	+21	− 97	−1232
	Wales	− 45	− 21	−25	−28	+50	+321	+433	+ 31	+12	−152	−182	−22	− 6	+103	+ 469
	England and Wales	+ 59	+ 10	+ 4	+27	+57	+ 26	+447	+144	+12	+ 7	+152	+ 2	+10	+ 96	+1053
Other Urban Districts	North	+ 16	—	− 5	+49	− 7	+190	+257	+ 54	+ 7	+178	+161	+23	−14	+ 94	+1003
	Midlands	−102	− 7	—	−27	−35	−105	−361	−157	−17	− 59	− 55	+ 2	− 7	−149	−1079
	South	− 94	− 89	−16	−42	−46	−203	−836	−279	− 3	−182	−302	+ 8	+22	−144	−2206
	Wales	−106	+ 21	+ 1	−38	−62	+525	+208	+ 89	+83	+158	−115	+ 2	−23	+154	+ 897
	England and Wales	− 61	− 16	− 4	− 5	−31	+ 52	−168	− 78	+ 5	+ 26	− 32	+10	− 6	− 30	− 338
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Rural Districts	North	— 55	— 42	—26	+19	—44	+117	—146	— 24	— 9	+138	+192	— 8	—22	+211	+ 301
	Midlands	—122	— 27	—30	—51	—60	— 94	—770	—240	—24	— 15	— 97	—16	—31	—184	—1761
	South	—136	— 50	—28	—80	—56	—115	—992	—255	—38	— 72	—306	—10	+27	—274	—2385
	Wales	—121	+ 58	+ 8	—23	—25	+566	—428	— 12	+48	+159	+ 51	+24	—22	+178	+ 461
	England and Wales	—109	— 27	—24	—37	—51	+ 25	—635	—167	—16	+ 28	— 60	— 8	—14	— 71	—1166
		Rates per cent. of those for England and Wales.														
All Areas	North	144	92	103	127	138	130	124	127	102	117	111	111	107	117	118
	Midlands	53	111	79	86	79	78	87	83	98	96	99	90	75	88	91
	South	117	95	124	91	83	54	82	82	96	77	87	95	128	87	85
	Wales	37	107	94	77	74	209	104	109	114	115	96	102	65	115	109
London		212	117	221	104	101	43	111	112	94	78	86	82	114	92	97
County Boroughs	North	183	89	130	124	181	124	138	144	103	109	113	112	137	121	124
	Midlands	96	140	103	107	113	77	118	115	102	101	105	80	84	96	106
	South	52	67	48	148	104	66	73	63	105	67	99	126	137	90	84
	Wales	71	94	24	80	145	171	124	106	103	76	90	83	89	110	106
	England and Wales	138	103	112	119	151	106	125	126	103	101	108	102	118	110	114
Other Urban Districts	North	110	—	85	135	94	142	114	110	102	128	109	117	75	109	113
	Midlands	35	98	100	81	69	77	80	72	96	91	97	102	88	85	86
	South	40	74	52	70	59	55	54	50	99	71	84	106	139	86	71
	Wales	32	106	103	73	45	216	112	116	120	125	94	102	60	115	112
	England and Wales	61	95	88	96	72	111	91	86	101	104	98	108	89	97	96
Rural Districts	North	65	88	21	114	61	126	92	96	98	122	110	94	61	121	104
	Midlands	22	92	9	63	46	79	57	57	94	98	95	88	46	82	77
	South	13	85	15	42	50	75	45	54	91	89	84	92	147	73	69
	Wales	22	117	124	83	78	225	76	98	111	125	103	118	61	118	106
	England and Wales	30	92	27	73	54	106	65	70	96	104	97	94	75	93	85

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In 1920 these figures had fallen to 29 and 45, and in 1921 to 5 and 22. For 1922 they are 28 and 14. The highest rates under this heading are now returned by the rural districts of the South, and the lowest by Wales and by the rural districts of the Midlands; but how far these variations represent differences in mortality and how far differences in the practice of coroners may be open to question.

MORTALITY AT AGES OVER ONE YEAR.

Table XIV gives the crude and standardized death-rates for sexes and persons for the whole country, as well as the mortality per million living at different ages for 1921 and 1922, and, in order to provide means of comparison with the most recent pre-war experience, for 1911–14.

Table XIV.—England and Wales: Mortality from all Causes per Million Population, 1911–1914, 1921, and 1922. (Total deaths registered).

	Males.			Females.			Persons.		
	1911–14.	1921.	1922.	1911–14.	1921.	1922.	1911–14.	1921.	1922.
All Ages:									
Crude	14,870	12,962	13,565	13,041	11,324	12,018	13,926	12,105	12,757
Standardized A	14,962	12,523	12,852	12,335	10,241	10,577	13,571	11,315	11,645
Standardized B	16,080	13,119	13,648	13,892	11,282	11,853	14,949	12,165	12,712
0–..	40,228	32,290	30,192	33,647	25,817	24,463	36,957	29,094	27,365
5–..	3,276	2,812	2,616	3,221	2,705	2,508	3,248	2,759	2,562
10–..	1,953	1,760	1,740	2,051	1,824	1,836	2,002	1,792	1,788
15–..	2,910	2,844	2,684	2,662	2,691	2,564	2,785	2,767	2,624
20–..	3,681	3,570	3,734	3,091	3,240	3,226	3,370	3,392	3,463
25–..	4,822	4,206	4,359	3,976	3,698	3,850	4,378	3,929	4,081
35–..	8,167	6,532	6,910	6,556	5,200	5,331	7,333	5,822	6,066
45–..	15,023	11,417	11,990	11,522	8,755	9,337	13,203	10,040	10,615
55–..	30,500	24,403	25,964	23,162	18,159	19,682	26,627	21,124	22,665
65–..	64,597	55,800	61,199	51,584	43,558	48,557	57,350	48,996	54,192
75–..	139,355	128,697	143,911	119,280	108,923	120,862	127,412	116,714	129,944
85 and upwards	271,185	262,813	271,253	244,078	232,315	251,002	253,709	242,309	257,675

A. English Standard (Population of England and Wales, 1901). B. International Standard. (*See* page 1.)

For the first time since 1915 it is possible to tabulate the full range of age group death-rates for males, the census of 1921 having provided the necessary population figures, which the disturbance of military recruiting and war deaths had rendered unobtainable during and after the war. The table is of interest in showing definitely a remarkable feature which it was possible to suspect, but not definitely to demonstrate and to measure from the records of previous years, in which males between the ages of 15 and 45 were necessarily dealt with in one group. At ages 25–55, corresponding with about 20–50 during the war, the mortality of males was lower in both 1921 and 1922 than immediately before the war, notwithstanding invalidism due to wounds, gassing, hardship, infection, etc., on service. The degree of this reduction can be better appreciated when the changes since 1911–14, shown in Table XIV, are restated in

ratio form, taking the 1911–14 rate as 100 in each case. The figures for 1921 and 1922 are then as follows :—

	Males.		*Females.*	
	1921.	1922.	1921.	1922.
0— ..	80	75	77	73
5— ..	86	80	84	78
10— ..	90	89	89	90
15— ..	98	92	101	96
20— ..	97	101	105	104
25— ..	87	90	93	97
35— ..	80	85	79	81
45— ..	76	80	76	81
55— ..	80	85	78	85
65— ..	86	95	84	94
75— ..	92	103	91	101
85— ..	97	100	95	103

For both sexes alike the post-war reduction of mortality is large in infancy, gradually lessens to a minimum in adolescence, thereafter rising again to a second maximum in later middle life (45–55), after which it again falls to reach a second minimum in extreme old age. It would seem therefore that factors of a more fundamental nature than the conditions and effects of active service have been influencing the mortality of both sexes very similarly at each period of life. It seems to follow that the attempt to explain changes in the mortality of young adult males in reference to their service in the field, or of young adult females in reference to their service in munition factories, may be abandoned, as conditions peculiar to either sex can obviously not form the whole explanation of a movement common to both. Some significance, of course, may attach to the fact that at the ages most of all affected by the war, which may be taken as 20–35 in 1922, mortality in both 1921 and 1922, but especially in 1921, was decidedly lower, as compared with that immediately before the war, for males than for females, whereas at adjoining ages the movement is more alike for both sexes. From this fact it may be justifiable to deduce the inference that on balance the health of the men who fought the war has not suffered as a result of their war service.

As compared with the preceding year the death-rate of males in 1922 fell at all ages under 20, and rose at all later ages, while that of females followed the same course except for a slight rise at 10–15, and commencement of the rise in later life at 25–35 instead of 20–25. It may be noted that in 1921 as well as 1922 the death-rate was lower for females than for males at all ages except 10–15. The apparent excess for females aged 85 and upwards, to which attention was drawn in last year's Review as a most unusual feature of the mortalities of 1920 and 1921, has proved to have been due to error in the estimation made of population at these ages. On the figures as revised in the light of the 1921 census, the death-rate of males aged 85 and upwards

is changed only from the 270·1 per 1,000 of Table 3 to 271·3, but that for females is reduced from 304·8 to 251·0. As may be seen from comparison of Table 3 with the revised rates in Table XIV, this is much the most serious change involved by use of the new estimates of population in preparing age death-rates for 1922, but as the whole line for the year in Table 3 is affected it will be convenient to defer comparisons with earlier years based upon this table until its entries for 1922 have been revised.

The improvement at age 0–5 shown in Table 3 is greatly increased when allowance is made for the changes caused by the war in the proportions at the five years of life making up the group (Table XV). Before this is done 1922 holds an advantage over 1919 represented by a fall of only 6 per cent., whereas the more correct form of statement increases the fall to 22 per cent. As compared with 1921, however, standardization decreased the fall recorded from 6 to 2 per cent. (Table XVI). The standardized rates for each sex are less than half those recorded in Table 3 for any quinquennium during the nineteenth century, and in the case of females less than half the rate for any single year in that century. The reason why standardization decreases the mortality of 1920–22, while increasing that of the four preceding years, is that in consequence of the low birth-rates of those four years the children in the 1920–22 populations at ages 2–5, when mortality is low, are comparatively few, while the higher birth-rates of 1920–22 are represented by comparatively large numbers at 0–2, when mortality is high. Allowance for this disadvantage of the later populations reduces their mortality as shown.

Table XV.—England and Wales, 1916–22 : Comparison of Crude and Standardized Death-Rates at Age 0–5.

——	Males.		Females.		Both Sexes.	
	Crude.	Standardized.	Crude.	Standardized.	Crude.	Standardized.
1916	32·5	34·0	26·5	27·9	29·5	31·0
1917	31·7	34·1	26·2	28·3	29·0	31·2
1918	38·5	42·5	33·8	37·1	36·2	39·8
1919	32·4	36·4	26·1	29·3	29·3	32·9
1920	35·7	31·7	28·5	25·9	32·2	28·8
1921	32·3	29·2	25·8	23·6	29·1	26·4
1922	30·2	28·5	24·5	23·1	27·4	25·8

Mortality at 1–5.—Table XVI shows that, as was indeed to be expected, the exceptionally rapid fall in mortality at these ages recorded in last year's Review, has not been maintained in 1922. The standardized rate for males, 12·03 per 1,000 living, is 22 per cent. above that of the previous year and 24 per cent. below that of 1911–14. For females the corresponding movements are 23 and 25 per cent.

Table XVI.—England and Wales : Mortality per 1,000 living in each of the First Five Years of Life, 1911–14, 1921, and 1922.

Year of Life.	Males.					Females.					Both Sexes.				
	1911–14.	1921.	1922.	1922 per cent. of		1911–14.	1921.	1922.	1922 per cent. of		1911–14.	1921.	1922.	1922 per cent. of	
				1911–14.	1921.				1911–14.	1921.				1911–14.	1921.
0–1	132·06	99·83	88·77	67·2	88·9	104·47	76·40	66·55	63·7	87·1	118·40	88·31	77·83	65·7	88·1
1–2	35·12	19·92	25·87	73·7	129·9	32·43	17·90	23·88	73·6	133·4	33·79	18·93	24·89	73·7	131·5
2–3	13·71	9·40	10·93	79·7	116·3	13·37	8·67	10·43	78·0	120·3	13·54	9·04	10·68	78·9	118·1
3–4	8·26	5·98	6·89	83·4	115·2	8·13	5·86	6·47	79·6	110·4	8·19	5·92	6·69	81·7	113·0
4–5	6·08	4·27	4·43	72·9	103·7	6·05	4·19	4·41	72·9	105·3	6·07	4·23	4·42	72·8	104·5
0–5 Crude	40·23	32·29	30·19	75·0	93·5	33·65	25·82	24·46	72·7	94·7	36·96	29·09	27·36	74·0	94·1
0–5 Standardized* ..	40·71	29·17	28·48	70·0	97·6	34·17	23·57	23·14	67·7	98·2	37·45	26·38	25·82	68.9	97·9
1–5 Crude	15·85	10·90	13·09	82·6	120·1	15·03	9·99	12·25	81·5	122·6	15·44	10·45	12·68	82·1	121·3
1–5 Standardized* ..	15·79	9·89	12·03	76·2	121·6	14·99	9·15	11·29	75·3	123·4	15·39	9·52	11·66	75·8	122·5

* Based on the constitution of the population in 1901.

Table XVI shows that whereas the mortality of the first year of life fell by 12 per cent. in 1922, that of the second increased by almost 32 per cent., and those of the three succeeding years by decreasing amounts, aggregating in all about 22 per cent. at 1–5. As the populations at risk at different ages were changing violently (*see* Table LVI and its predecessor for 1921) in consequence of fluctuations in the birth-rate of preceding years, the movement of death-rates in Table XVI does not by any means correspond to that of the recorded numbers of deaths at the same ages. In order to measure, therefore, the extent to which the various ages concerned are responsible for the increase of mortality at 1–5, it is necessary to apply the death-rates for persons in Table XVI to a fixed population, as in the following statement.

Deaths in 1901 Census Population at Rates recorded in 1921 and 1922:—

	Deaths at 1921 rates.	Deaths at 1922 rates.	Difference in 1922.
0–1 ..	70,366	62,015	— 8,351
1–2 ..	13,777	18,115	+ 4,338
2–3 ..	6,648	7,854	+ 1,206
3–4 ..	4,322	4,885	+ 563
4–5 ..	3,073	3,211	+ 138
	98,186	96,080	— 2,106

These figures show that it is chiefly increased mortality in the second year of life which accounts for the increase at 1–5, and that, if it had not been for the decrease in infant mortality, the total rate at 0–5 would have risen appreciably. The distribution of the population at 0–5 over the five years of life concerned was of course much more normal in 1901 than it has been during the past few years of violently fluctuating birth-rates, and consequently the statement based upon that population conveys a better idea of the general effect of the changes which have occurred than if, for instance, the 1921 census populations had been employed. It was the second year of life which was chiefly affected by the exceptional fall at 1–5 recorded for 1921, so it is not surprising that this year should be chiefly affected also by the reaction noted in 1922. On the other hand the remarkable improvement noted in 1921 upon the 1911–14 standard for the fifth year of life has been for the most part maintained, the decrease in 1921 being 30 and in 1922, 27 per cent.

As a result of the completion of the tabulation of ages at the census of 1921, it has now become possible to restore in Table XVII the tabulation of death-rates in early childhood for sections of the population, as published in the Reports for 1911–14, but abandoned from 1915 onwards owing to the impossibility of estimating their populations at various ages on account of the abnormal migration occasioned by the war.

Table XVII.—Mortality in Early Childhood, 1922 : Deaths per 1,000 Living at each Age. (Both Sexes.)

	1—2 years.					2—5 years. (Mean Annual Mortality.)				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	36·77	—	36·77	—	—	12·03	—	12·03
County Boroughs	35·33	28·49	17·26	23·19	30·86	10·37	8·43	6·25	7·39	9·21
Other Urban Districts ..	27·32	18·18	13·40	24·35	21·18	8·30	6·20	5·07	7·30	6·85
Rural Districts	21·04	12·82	9·63	15·03	14·23	6·37	4·14	3·31	5·26	4·60
All Areas	30·71	20·31	23·73	21·39	24·83	9·12	6·39	7·98	6·70	7·76

The outstanding feature in this table is the high mortality—much the highest in the whole table—shown for London. This is a most exceptional experience, London generally yielding rates at these ages lower than those of the county boroughs, and, still more, than those of the Northern county boroughs. The contrast in this respect between the experience of 1922 and of all the previous years available for comparison, is shown in Table XVIII, from which it will be seen that the 1922 excess in the mortality of London over that of England and Wales —48 per cent. at 1–2 and 55 per cent. at 2–5—is much greater than for any of the four earlier years compared with it.

Table XVIII.—Mortality at 1–2 and at 2–5 Years of Age per cent. of that in England and Wales—1911, 1912, 1913, 1914, and 1922.

	Year.	1–2 Years.					2–5 Years.				
		North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	1911	—	—	122	—	—	—	—	116	—	—
	1912	—	—	111	—	—	—	—	103	—	—
	1913	—	—	111	—	—	—	—	103	—	—
	1914	—	—	109	—	—	—	—	108	—	—
	1922	—	—	148	—	—	—	—	155	—	—
County Boroughs	1911	141	119	81	88	126	139	118	84	88	125
	1912	154	120	74	148	135	148	126	83	161	135
	1913	152	121	73	83	132	139	123	90	93	127
	1914	170	117	66	132	142	153	116	75	120	133
	1922	142	114	69	93	124	134	109	81	95	119
Other Urban Districts ..	1911	117	85	67	96	94	115	87	77	87	95
	1912	115	71	55	127	90	117	74	63	124	92
	1913	120	77	58	95	90	117	84	73	96	94
	1914	110	68	52	102	84	116	77	60	107	90
	1922	110	73	54	98	85	107	80	65	94	88
Rural Districts	1911	86	52	46	55	59	88	57	53	63	64
	1912	80	54	41	68	59	82	58	41	64	60
	1913	96	49	43	71	61	96	59	48	77	67
	1914	90	51	36	61	57	88	56	43	65	61
	1922	85	52	39	60	57	82	53	43	68	59
All Areas	1911	125	86	90	81	100	123	87	91	79	100
	1912	129	82	80	113	100	127	86	79	112	100
	1913	133	83	81	85	100	125	89	83	89	100
	1914	138	79	76	95	100	131	84	80	96	100
	1922	123	82	95	86	100	118	82	103	86	100

The same table shows that, when similar classes of area are compared in each case, mortality at these, as generally at other, ages decreases from the North to the South of England, no exception to this rule being met with in any of the five years compared. The extent of this difference is brought out more clearly in Table XIX, which shows that in 1922 the Northern excess was greatest, both at 1–2 and at 2–5, in the rural districts, where it amounted to no less than 48 per cent. at 1–2 and 38 at 2–5. The advantage of the South, on the other hand, was greatest in the county boroughs, where it amounted to 44 per cent. at 1–2 and 32 per cent. at 2–5 in 1922.

Table XIX.—Mortality at 1–2 and at 2–5 Years of Age per cent. of that in England and Wales in the same class of Area—1911, 1912, 1913, 1914, and 1922.

	Year.	1–2 Years.					2–5 Years.				
		North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
County Boroughs	1911	112	95	64	69	100	111	94	67	70	100
	1912	114	89	55	109	100	109	93	62	119	100
	1913	115	92	56	63	100	109	97	71	73	100
	1914	120	82	47	93	100	116	88	56	91	100
	1922	114	92	56	75	100	113	92	68	80	100
Other Urban Districts ..	1911	124	90	70	101	100	121	92	81	91	100
	1912	127	79	61	141	100	126	80	68	134	100
	1913	132	85	64	105	100	124	89	77	102	100
	1914	132	82	62	122	100	128	85	67	119	100
	1922	129	86	63	115	100	121	91	74	107	100
Rural Districts	1911	146	88	78	93	100	138	89	83	99	100
	1912	136	93	69	117	100	136	97	68	107	100
	1913	158	80	71	116	100	144	88	73	116	100
	1914	156	88	62	106	100	144	92	70	105	100
	1922	148	90	68	106	100	138	90	72	114	100

It is of some interest to inquire the reason for the unfavourable position of London in 1922, and with this object Table XX has been prepared. In this the mortality in London, from each of the chief causes of death at the ages in question, is compared with the same rates for England and Wales, the county boroughs as a whole, and the county boroughs of each of the four geographical sections of the country employed in this tabulation.

Table XX.—Mortality from Various Causes at 1–2 and 2–5 Years of Age in London, County Boroughs, and England and Wales, 1922.

	1—2 Years.						
			County Boroughs.				
	London	England and Wales.	England and Wales.	North.	Midlands.	South.	Wales.
All Causes ..	36·77	24·89	30·86	35·33	28·49	17·26	23·19
Measles	8·08	3·20	4·27	5·52	3·37	1·57	1·37
Whooping Cough ..	5·16	2·84	3·04	2·72	4·13	1·53	2·31
Diphtheria ..	2·22	0·68	0·62	0·67	0·53	0·52	0·86
Influenza	1·25	1·21	1·29	1·40	1·17	0·88	1·80
Tuberculosis ..	1·52	1·67	2·05	2·53	1·61	1·24	1·28
Bronchitis	1·02	1·71	2·30	2·59	2·19	1·28	1·88
Pneumonia ..	12·81	8·48	11·15	12·74	10·32	5·86	9·24
Diarrhœa	0·94	1·03	1·38	1·75	1·04	0·84	0·51
Violence	0·58	0·62	0·79	0·89	0·70	0·72	0·34
	2—5 Years.						
All Causes	12·03	7·76	9·21	10·37	8·43	6·25	7·39
Measles	2·12	0·86	1·11	1·36	0·94	0·70	0·27
Whooping Cough ..	1·29	0·73	0·83	0·74	1·09	0·58	0·64
Diphtheria ..	2·07	0·74	0·59	0·51	0·56	0·81	1·15
Influenza	0·35	0·39	0·44	0·49	0·31	0·30	0·92
Tuberculosis ..	0·88	0·80	1·03	1·23	0·88	0·62	0·64
Bronchitis	0·20	0·31	0·44	0·53	0·37	0·32	0·20
Pneumonia ..	2·80	1·85	2·44	2·78	2·33	1·20	1·73
Diarrhœa	0·09	0·15	0·18	0·23	1·27	0·11	0·10
Violence	0·37	0·45	0·52	0·61	0·42	0·34	0·51

From this table it is seen that, as might have been suspected, the unfavourable position of London is entirely due to exceptional mortality from infectious disease (if we may assume that the excess of mortality from pneumonia was due to that from measles and whooping cough), which is of special importance at this period of life. The London death-rates from measles whooping cough and diphtheria are all in large excess, not only of those for England and Wales, but of those for the great towns of each section of the country. From all causes except these four, on the other hand, the London rates are comparatively low, that at 1–2 being 12 per cent below the corresponding rate for England and Wales, and 28 per cent. below that for the county boroughs. At 2–5 the same rate for London is 5 per cent. above the general average but 12 per cent. below the county borough

rate. It would seem therefore that the anomalous state of affairs revealed by Table XVII is a result merely of the fortuitous fact that London was afflicted by epidemics of measles whooping cough and diphtheria in the same year.

The results of the mortalities recorded in Tables VI and XVII are demonstrated in Table XXI by showing, in life table form, the numbers of survivors at the ends of the first, second and fifth years of life respectively, out of 10,000 children born to the various populations dealt with in these tables, assuming continuance of the mortality experience of 1922. This table resumes a series which appeared in the Reports for 1911–14, but was discontinued after the latter year on account of the obstacles already referred to as raised by the war to estimations of local mortality at different ages. In some minor respects, however, endeavour has now been made to improve the methods of construction previously followed.

1. Survivors at the end of the first year of life were formerly estimated by deducting infant deaths from births registered during the year and stating the balance per 10,000 births. This procedure, of course, makes the same assumption as does the crude infant mortality rate—that the number of births is approximately constant from year to year. Since, however, it has repeatedly been shown of late years that this assumption renders the crude infant mortality rate liable to serious error in years of rapidly changing birth-rates (Table IV) it has appeared desirable to make allowance for the results of these changes in Table XXI. This has been done, on the assumption that the degree of distortion imparted to the crude rates by birth-rate fluctuations is similar throughout the country, by ascertaining the ratio of the corrected rate, 74·68, for England and Wales, to its crude rate of 77·07, and multiplying the crude infant mortality rate for each of the populations dealt with in the table by this ratio. The deaths corresponding to 10,000 births in each case having been thus found, the balance represents the survivors at age 1 year of the 10,000 children born. It would no doubt be theoretically preferable to calculate a corrected infant mortality rate for each of the twenty populations, other than England and Wales, dealt with in Table XXI, but the labour involved would be very considerable, and has been held not to be justified by such slight increase of accuracy as is likely to be secured by it.

2. Survivors at the ends of the second and of the fifth years of life were formerly obtained by applying the death-rate during the second year to survivors aged 1 year and three times the mean annual death-rate at 2–5 to survivors aged 2 years, to obtain survivors aged two and five years respectively. This procedure is theoretically indefensible, though in practice the resultant error is small. The death-rates used apply, of course, not to the numbers entering upon the second and third years of life, but to the mean number living at ages 1–2 and 2–5. In the present table the appropriate statement of probability of survival from

the commencement to the end of these periods (p_x) has been obtained from their recorded death-rates (m_x) by use of the ordinary life table convention—$p_x = \frac{2-m_x}{2+m_x}$. It may be queried how far this assumption, generally applied to a single year of life only, holds good for so long a period as the three years' interval between ages 2 and 5. This has therefore been tested by calculating survivors at age 5, for England and Wales, by dividing age 2–5, in this case, into three equal yearly portions and ascertaining the value of p_x for each. The result, 8,831, differs so little from that of 8,818 stated in the table as to show that the method there followed, of treating 2–5 as a single age period, yields substantially accurate results.

It has been necessary to combine these three years of life, both in the tables for 1911–14 and in Table XXI, because the sections of the population dealt with have not hitherto been included in Table 16. It is proposed, however, to do so in future, and thereby to ascertain the deaths and death-rates for these sectional populations in each of the first five years of life.

Table XXI.—Mortality of Early Childhood in 1922 : Survivors of 10,000 Children born.

	North.	Midlands.	South.	Wales.	England and Wales.
	At end of First Year.				
London	—	—	9,275	—	9,275
County Boroughs ..	9,078	9,205	9,373	9,208	9,151
Other Urban Districts ..	9,156	9,358	9,467	9,166	9,286
Rural Districts	9,224	9,424	9,484	9,209	9,366
All Areas	9,122	9,321	9,368	9,187	9,253
	At end of Second Year.				
London	—	—	8,940	—	8,940
County Boroughs ..	8,762	8,947	9,212	8,997	8,873
Other Urban Districts ..	8,909	9,189	9,341	8,946	9,091
Rural Districts	9,032	9,304	9,393	9,071	9,234
All Areas	8,846	9,134	9,148	8,993	9,026
	At end of Fifth Year.				
London	—	—	8,624	—	8,624
County Boroughs ..	8,494	8,723	9,041	8,799	8,631
Other Urban Districts ..	8,690	9,020	9,200	8,752	8,906
Rural Districts	8,861	9,189	9,301	8,929	9,107
All Areas	8,608	8,961	8,932	8,814	8,818

Of Table XXI itself little need be said. It shows that at each age and in each class of area dealt with the number of survivors increases in England from a minimum in the North to a maximum in the South, while similar regular increase of survivors is shown by class of area, from county boroughs to rural districts. The advantage held by London over the county boroughs during the first year of life, and the gradual loss of this during the next four, may also be noted, though, as already seen, this loss is an exceptional feature of the year 1922.

The causes of death accounting for the sudden increase shown in Table XVI of mortality at ages 1–5 in 1922 by 22·5 per cent. may be gathered from Table XXII. Large increases are seen to have occurred from measles, whooping cough, influenza, and pneumonia, which were only partially offset by decrease from diarrhœa. Like the total mortality at these ages, which to a considerable extent it determines, that in 1921 from measles at all ages is seen from Table 6 to have been unprecedentedly low, and it is mainly because the mortality of 1921 was low rather than because that of 1922 has been high that the increase has occurred. The death-rates from burns and other forms of violence, which at this age are comparatively important, have remained well below the pre-war level.

Table XXII.—England and Wales : Mortality per Million living at Ages 1–5 Years in 1911–14, 1921, and 1922. (Both Sexes.)

Cause of Death.	Death-rate.			Cause of Death.	Death-rate.		
	1911–14.	1921.	1922.		1911–14.	1921.	1922.
7. Measles	2,643	603	1,530	98:2. Laryngitis	151	91	65
8. Scarlet Fever	369	198	229	99. Bronchitis	862	623	710
9. Whooping Cough ..	1,202	853	1,338	100. Broncho-pneumonia..	2,146	2,091	3,015
10. Diphtheria	772	778	723	101. Pneumonia (Lobar and not otherwise defined).	856	591	736
11. Influenza	59	188	624	Other respiratory diseases	138	93	104
31. Tuberculosis of Respiratory System.	235	144	170	112 : 1 Inflammation of the Stomach.	93	73	64
32. Tuberculosis of Nervous System.	697	480	521	113 & 114. Diarrhœa and Enteritis.	1,621	990	403
33. Tuberculosis of Intestines and Peritoneum.	387	226	190	128. Acute Nephritis ..	88	53	49
34–37. Other tuberculous diseases.	284	173	171	159. Congenital Malformations.	84	89	92
56. Rickets	170	109	86	179. Burns	356	278	301
71. Meningitis	446	288	263	Other Violence ..	271	239	201
80. Convulsions	455	321	268	Other Causes ..	1,060	875	823
				All Causes	15,445	10,447	12,676

Mortality of the Aged.—The growing importance of this portion of our total mortality may be gathered from the fact that whereas from 1911 to 1921 the total population increased by 5 per cent., that at ages over 70 showed an increase of no less than 22 per cent., its proportion to the total increasing from 2·97 to 3·44 per cent.

The principal causes to which mortality at ages over 70 is attributed are set out in Table XXIII in comparison with corresponding figures for other recent years. In making these comparisons the declining vogue of "old age" as a form of death return causes a difficulty. The proportion of deaths so certified at over 70 years of age has fallen from 28·9 per cent. in 1911 to 19·1, the lowest figure yet reached, in 1922, with, of course, a corresponding increase in the proportions and death-rates assignable to defined causes.

Most of the causes distinguished in the table show some increase of mortality in 1922, especially for males, the chief of these increases being those from influenza, diseases of the heart and blood vessels, bronchitis and pneumonia.

Table XXIII.—England and Wales: Mortality over 70 Years of Age in 1911–15, 1916–20, 1921, and 1922, from the Chief Causes of Death.

	Deaths from each Cause per 1,000 Total Deaths.				Mortality per 1,000 Living.			
	1911-15.	1916-20.	1921.	1922.	1911–15.	1916–20.	1921.	1922.
Males.								
Influenza (11)	15	25	14	33	1·8	2·9	1·5	3·8
Cancer (43–49)	79	84	100	91	9·5	9·7	10·5	10·5
Heart Diseases (87–90)	143	154	156	162	17·1	17·9	16·4	18·6
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	139	154	178	177	16·6	17·9	18·7	20·3
Bronchitis (99)	136	139	125	138	16·2	16·2	13·2	15·9
Pneumonia (100. 101)	34	35	34	36	4·1	4·0	3·5	4·2
Chronic Nephritis (129)	30	28	27	26	3·6	3·2	2·8	3·0
Old Age (164)	237	208	190	178	28·3	24·2	20·0	20·5
Other Causes	187	173	176	159	22·3	20·3	18·5	18·0
All Causes	1,000	1,000	1,000	1,000	119·5	116·3	105·1	114·8
Females.								
Influenza (11)	19	28	18	38	1·9	2·9	1·7	3·8
Cancer (43–49)	85	90	101	93	8·9	9·0	9·2	9·4
Heart Diseases (87–90)	146	161	176	179	15·3	16·2	16·1	18·1
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	132	146	163	161	13·8	14·7	15·0	16·2
Bronchitis (99)	147	151	132	148	15·4	15·3	12·1	14·9
Pneumonia (100, 101)	33	32	33	34	3·4	3·2	3·0	3·5
Chronic Nephritis (129)	22	19	20	20	2·3	1·9	1·9	2·0
Old Age (164)	263	234	219	201	27·5	23·6	20·0	20·3
Other Causes	153	139	138	126	16·0	13·9	12·5	12·7
All Causes	1,000	1,000	1,000	1,000	104·5	100·7	91·5	100·9
Persons.								
Influenza (11)	17	27	17	36	1·9	2·9	1·6	3·8
Cancer (43–49)	82	87	100	92	9·1	9·3	9·7	9·8
Heart Diseases (87–90)	145	158	167	172	16·0	16·9	16·2	18·3
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	135	149	170	168	14·9	16·0	16·5	17·9
Bronchitis (99)	142	146	129	144	15·7	15·6	12·5	15·3
Pneumonia (100, 101)	33	33	33	35	3·7	3·5	3·2	3·7
Chronic Nephritis (129)	26	23	23	23	2·8	2·5	2·3	2·4
Old Age (164)	251	222	206	191	27·8	23·8	20·0	20·3
Other Causes	169	155	155	139	18·8	16·7	15·0	15·1
All Causes	1,000	1,000	1,000	1,000	110·7	107·2	97·0	106·6

Centenarians.—Among the deaths registered during the year there were 77 of reputed centenarians, 18 of whom were males and 59 females. In the preceding three years the numbers were 76, 55 and 59 respectively. Particulars of the ages returned and of the classes of area concerned are given in Table XXIV.

Table XXIV.—England and Wales, 1922 : Deaths of Centenarians.

	Males.						Females.							
	Age.						Age.							
	100 and over	100.	101.	102.	103.	106.	100 and over	100.	101.	102.	103.	104.	105.	106.
London	1	1	—	—	—	—	5	3	2	—	—	—	—	—
County Boroughs	3	1	1	1	—	—	13	3	6	2	1	—	1	—
Other Urban Districts ..	6	2	1	1	2	—	16	5	3	3	4	—	—	1
Rural Districts	8	4	1	—	2	1	25	10	7	5	—	3	—	—
All areas	18	8	3	2	4	1	59	21	18	10	5	3	1	1

Mortality in Town and Country and in different Portions of the Country.—The Annual Report for each of the years 1911–14 includes a table (Table 16 in those reports) comparing mortality in the various classes of urban and rural areas of the different parts of England and Wales distinguished in Tables VI, XVII, &c., with distinction of sex and of twelve groups of ages, the general effect of the different age rates being summed up in a standardized rate applying to all ages. This tabulation had to be omitted in 1915 and subsequent years, because of the impossibility of estimating the effects of the war upon the local age group populations dealt with. Since the results of the 1921 census have become available this difficulty has disappeared, and in Table XXV the Table 16 of 1911–14 is restored, but with the number of age groups distinguished cut down from twelve to nine. So far as the distinction between classes of area is concerned, however, without reference to parts of the country, the number of age groups distinguished has been increased in Table XXVI to 18 for the purpose of constructing Diagram 1, which corresponds with the similar diagram No. III in the Report for 1911. Both table and diagram relate to the mortality, not of 1922, but of 1921, partly because it is convenient to compare with the similar records of a ten years' earlier date, but mainly because the detailed distinctions of age made in the estimates of population employed can be more conveniently and accurately drawn for a census year than any other. The ratios charted in the diagram are derived from Table XXVI by taking the mortality of the whole country at each age as 100, and plotting that for each class of area at the same age higher or lower on the scale in proportion as it exceeds or falls short of this standard.

As in 1911 the same order of mortality prevails, generally speaking, amongst the four classes of area at the several age periods as at all ages jointly. The diagrams for the two years, indeed, are so much alike, except in minor details, that the following description of that for 1911 may be quoted as applicable also to Diagram 1. "The curves start wide apart in early childhood, but rapidly approximate or in some instances even overlap considerably in early adult life," when mortality is higher for females in the rural districts than in London or the urban districts, "diverge very widely indeed in middle life, and approximate very closely in extreme old age. This holds good of each sex, but the overlapping in early adult life is most marked in the case of females, and the divergence at middle age in that of males." This latter sex difference has become still greater in 1921 than in 1911, but otherwise the two diagrams are so much alike as to suggest that the relationships figured in them, remarkable though their age variations be, are still of a very stable nature, the age variations in question being apparently permanent features of the comparison. The causes of these, and their probable connexion with migration, have been much discussed of late years, particularly in the annual reports of the Medical Officer of Health for the County of London. It must not be inferred from the diagram that rural surroundings are prejudicial to the health of females age 15–35, as the facts can be otherwise explained; but the remarkable excess in the large towns of mortality amongst males in middle life, and especially at 45–55, is probably the result, in the main, of the adverse conditions of urban life, whether these are more severe for males, or whether males are more susceptible to such adversity.

Table XXV provides means of comparing the mortality, in different parts of the country and classes of area, of each of the sex and age groups of the population distinguished. In each case the general result for all ages is summed up in the standardized rate. This increases with increasing urbanization, from 976 in the rural districts to 1,300 in the county boroughs. For each class of area, considered separately, English mortality is highest in the North and lowest in the South for each sex, Wales in each case coming between the North and the Midlands, except in that of the rural districts, for which the Welsh rates are, in both sexes, highest of all. When, however, all classes of area are considered jointly, the mortality of the South is higher than that of the Midlands for males, and practically identical with it for females. This is due to inclusion of London in the South, the London rate for males being considerably, and that for females somewhat, in excess of the average for England and Wales.

The same rule of decrease from North to South applies, with comparatively few exceptions, to the mortalities of the various age groups distinguished, as to the standardized total rates, the position of Wales as regards the three portions of England varying a good deal in different cases. This may be

Table XXV.—Civilian Mortality from All Causes

	All Areas.					London.	County Boroughs.				
	England and Wales.	North.	Midlands.	South.	Wales.		Total.	North.	Midlands.	South.	Wales.
MALES.											
All Ages—											
Crude	1,368	1,433	1,267	1,406	1,362	1,503	1,445	1,509	1,345	1,427	1,430
Standardized ..	1,287	1,444	1,161	1,232	1,343	1,442	1,445	1,557	1,334	1,216	1,476
0	3,019	3,629	2,619	2,715	2,935	3,537	3,578	3,984	3,293	2,503	3,048
5	216	239	194	216	214	270	229	245	218	194	194
15	320	346	284	316	368	345	350	370	311	350	393
25	439	460	414	428	479	444	470	484	425	486	571
35	693	758	607	706	709	815	798	860	721	666	875
45	1,200	1,300	1,050	1,239	1,233	1,482	1,357	1,442	1,237	1,210	1,520
55	2,596	2,884	2,325	2,520	2,807	2,989	2,918	3,116	2,683	2,542	3,188
65	6,120	6,945	5,555	5,779	6,715	6,531	6,862	7,447	6,310	5,723	7,663
75 and upwards ..	15,681	16,622	15,260	15,234	16,679	15,822	16,425	17,140	15,842	15,577	17,040
FEMALES.											
All Ages—											
Crude	1,202	1,264	1,134	1,197	1,232	1,225	1,244	1,298	1,153	1,252	1,210
Standardized ..	1,058	1,209	975	976	1,146	1,127	1,171	1,274	1,078	959	1,202
0	2,446	2,902	2,144	2,225	2,357	3,009	2,882	3,216	2,681	1,896	2,401
5	216	241	191	216	211	255	230	247	206	218	237
15	289	303	278	257	389	275	297	316	264	261	396
25	385	419	360	345	497	359	406	434	362	366	492
35	533	593	488	490	630	530	583	613	544	525	649
45	934	1,032	853	883	1,054	997	1,020	1,077	942	920	1,184
55	1,968	2,293	1,772	1,793	2,167	2,032	2,191	2,405	1,979	1,849	2,150
65	4,856	5,766	4,391	4,406	5,310	4,803	5,389	5,976	4,812	4,539	5,821
75 and upwards ..	13,775	15,220	13,227	13,137	14,706	13,468	14,555	15,459	13,962	13,216	15,816
PERSONS.											
All Ages—											
Crude	1,281	1,345	1,198	1,293	1,297	1,353	1,339	1,399	1,244	1,330	1,320
Standardized ..	1,165	1,320	1,056	1,096	1,238	1,274	1,300	1,408	1,198	1,080	1,331
0	2,736	3,269	2,385	2,474	2,650	3,276	3,234	3,603	2,991	2,204	2,729
5	216	240	192	216	212	262	230	246	212	206	215
15	304	324	281	283	378	306	322	341	285	298	394
25	409	438	384	381	488	395	435	457	390	415	531
35	607	671	543	585	669	658	683	728	626	586	762
45	1,062	1,163	948	1,047	1,147	1,225	1,183	1,255	1,085	1,050	1,359
55	2,267	2,576	2,037	2,126	2,493	2,477	2,534	2,744	2,314	2,152	2,685
65	5,419	6,298	4,915	4,994	5,984	5,544	6,034	6,623	5,475	5,023	6,712
75 and upwards ..	14,511	15,763	14,029	13,918	15,517	14,294	15,233	16,070	14,651	14,038	16,302

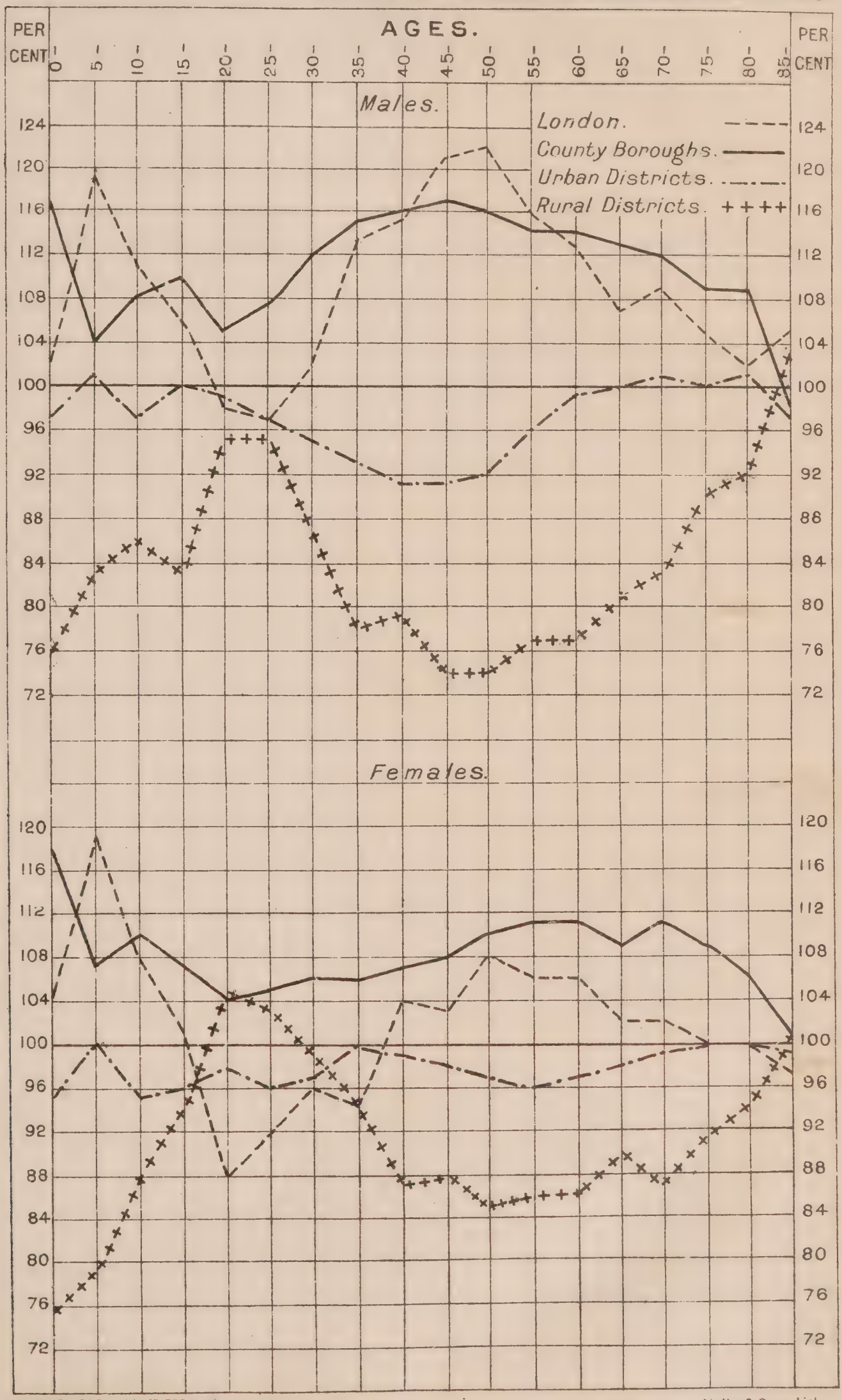
per 100,000 living at Various Ages, 1922.

Other Urban Districts.					Rural Districts.					All Urban Districts.				
Total.	North.	Midlands.	South.	Wales.	Total.	North.	Midlands.	South.	Wales.	Total.	North.	Midlands.	South.	Wales.
MALES.														
1,306	1,390	1,215	1,314	1,334	1,269	1,244	1,246	1,291	1,362	1,394	1,463	1,275	1,434	1,362
1,239	1,393	1,143	1,090	1,379	1,047	1,158	989	971	1,212	1,356	1,493	1,232	1,299	1,409
2,767	3,379	2,447	2,025	3,093	2,217	2,871	2,008	1,751	2,590	3,228	3,753	2,848	2,937	3,081
211	248	192	181	214	176	195	166	154	226	227	246	204	231	208
313	327	281	301	393	271	303	256	246	311	334	353	295	333	393
424	444	416	394	438	406	401	397	394	475	447	469	420	436	480
630	683	565	621	706	549	534	524	585	599	729	791	637	733	757
1,136	1,218	1,060	1,091	1,227	885	926	810	900	1,059	1,281	1,355	1,141	1,320	1,313
2,584	2,851	2,413	2,282	2,986	1,973	2,127	1,858	1,904	2,343	2,784	3,011	2,535	2,692	3,047
6,137	6,905	5,668	5,576	6,814	5,100	5,533	4,813	4,879	6,167	6,487	7,224	5,951	6,070	7,067
15,678	16,799	15,143	14,974	17,159	15,048	15,192	15,027	14,677	16,127	15,976	16,994	15,423	15,453	17,125
FEMALES.														
1,158	1,244	1,087	1,139	1,177	1,191	1,170	1,180	1,169	1,333	1,205	1,278	1,117	1,203	1,187
1,015	1,172	942	846	1,154	914	1,044	865	814	1,101	1,097	1,235	1,004	1,015	1,168
2,218	2,648	2,038	1,581	2,471	1,777	2,302	1,613	1,364	2,134	2,620	2,999	2,343	2,424	2,452
213	245	197	196	204	175	206	164	151	205	227	246	201	231	213
284	296	275	228	383	292	268	305	246	395	288	309	270	259	387
371	391	358	300	506	389	431	360	360	487	384	418	360	342	502
512	594	463	429	619	483	504	453	455	634	545	606	500	498	628
891	1,010	812	786	1,049	823	901	802	737	983	961	1,051	871	917	1,088
1,934	2,263	1,788	1,605	2,264	1,657	1,923	1,526	1,538	2,052	2,055	2,349	1,874	1,858	2,230
4,778	5,764	4,349	4,106	5,252	4,310	5,000	4,050	4,014	5,140	5,025	5,891	4,551	4,512	5,418
13,653	15,338	12,979	12,993	14,269	13,236	14,204	12,941	12,764	14,691	13,963	15,410	13,383	13,244	14,718
PERSONS.														
1,228	1,314	1,147	1,217	1,256	1,230	1,207	1,213	1,227	1,347	1,294	1,366	1,192	1,308	1,274
1,120	1,277	1,036	960	1,259	976	1,098	922	887	1,153	1,218	1,357	1,111	1,148	1,280
2,496	3,017	2,246	1,807	2,786	2,001	2,590	1,814	1,560	2,366	2,928	3,379	2,599	2,684	2,770
212	246	194	188	209	176	201	165	153	216	227	246	203	231	211
297	311	278	260	388	281	286	280	246	351	309	330	281	292	390
395	416	384	339	473	397	417	377	375	481	412	441	387	382	491
567	636	510	511	663	514	518	487	514	617	629	693	563	601	692
1,009	1,111	931	923	1,142	853	913	806	813	1,021	1,115	1,199	1,001	1,102	1,205
2,240	2,543	2,082	1,904	2,635	1,812	2,025	1,689	1,712	2,198	2,397	2,664	2,187	2,235	2,650
5,373	6,279	4,926	4,709	5,998	4,684	5,262	4,409	4,414	5,634	5,664	6,483	5,166	5,165	6,208
14,416	15,906	13,792	13,710	15,436	14,021	14,652	13,843	13,583	15,298	14,703	16,002	14,141	14,027	15,685

Table XXVI.—Civilian Mortality from All Causes per 100,000 living at Various Ages, 1921.

	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.						
All Ages—						
Crude	1,306	1,385	1,390	1,258	1,209	1,333
Standardized	1,253	1,344	1,411	1,221	1,026	1,319
0—	3,229	3,310	3,776	3,130	2,461	3,433
5—	281	334	292	283	233	294
10—	176	195	190	171	152	183
15—	286	303	313	286	236	300
20—	363	354	381	360	344	368
25—	388	376	414	378	370	393
30—	454	463	506	431	396	468
35—	580	655	669	540	453	612
40—	727	834	842	663	576	764
45—	958	1,161	1,123	874	705	1,022
50—	1,363	1,661	1,588	1,253	1,015	1,456
55—	2,017	2,341	2,308	1,938	1,549	2,153
60—	2,990	3,369	3,403	2,967	2,302	3,207
65—	4,558	4,886	5,164	4,576	3,673	4,861
70—	7,217	7,878	8,081	7,314	5,978	7,699
75—	11,141	11,713	12,184	11,188	10,002	11,643
80—	16,961	17,358	18,550	17,123	15,545	17,670
85 and upwards	26,281	27,565	25,833	25,420	27,111	25,873
FEMALES.						
All Ages—						
Crude	1,132	1,133	1,171	1,102	1,121	1,135
Standardized	1,024	1,050	1,131	996	889	1,061
0—	2,582	2,696	3,053	2,462	1,944	2,750
5—	271	322	289	269	214	285
10—	182	197	200	173	161	188
15—	269	271	287	259	254	273
20—	324	285	338	316	342	320
25—	356	326	375	341	367	353
30—	385	369	407	372	380	386
35—	470	440	496	471	442	477
40—	573	595	615	565	501	591
45—	742	766	801	727	652	764
50—	1,035	1,113	1,138	1,002	877	1,076
55—	1,485	1,575	1,649	1,429	1,274	1,542
60—	2,229	2,352	2,482	2,154	1,916	2,319
65—	3,456	3,517	3,764	3,387	3,117	3,559
70—	5,639	5,771	6,244	5,581	4,922	5,871
75—	9,136	9,169	9,918	9,118	8,270	9,434
80—	14,535	14,545	15,358	14,598	13,603	14,873
85 and upwards	23,232	22,578	23,524	22,931	23,558	23,074
PERSONS.						
All Ages—						
Crude	1,215	1,248	1,274	1,175	1,164	1,228
Standardized	1,132	1,188	1,263	1,102	953	1,182
0—	2,909	3,006	3,418	2,800	2,207	3,095
5—	276	328	290	276	224	290
10—	179	196	195	172	156	185
15—	277	286	300	272	245	286
20—	342	314	357	336	343	341
25—	370	347	392	357	368	371
30—	416	410	452	399	388	423
35—	521	535	576	502	447	538
40—	645	704	721	611	537	672
45—	846	951	957	797	678	888
50—	1,193	1,372	1,356	1,122	944	1,258
55—	1,740	1,934	1,965	1,671	1,410	1,833
60—	2,586	2,822	2,909	2,531	2,104	2,730
65—	3,958	4,126	4,394	3,919	3,383	4,143
70—	6,313	6,619	7,006	6,308	5,409	6,629
75—	9,946	10,124	10,781	9,934	9,050	10,287
80—	15,439	15,483	16,452	15,517	14,425	15,855
85 and upwards	24,231	23,897	24,217	23,724	24,907	23,923

DIAGRAM I. DEATHS FROM ALL CAUSES, 1921.
MORTALITY AT DIFFERENT AGES IN VARIOUS CLASSES OF AREA
PER CENT OF MORTALITY AT THE SAME AGES IN ENGLAND AND WALES.



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seen more readily from the following statement in which the mutual relations of the mortalities stated in Table XXV for the four parts of the country distinguished are shown by numbering the highest 1, the next 2, the next 3, and the lowest 4.

Table XXVII.—Civilian Mortality from All Causes, 1922, Relative Position of Various Sections of the Country.

	All Areas.				County Boroughs.				Urban Districts.				Rural Districts.			
	North.	Midlands.	South.	Wales.	North.	Midlands.	South.	Wales.	North.	Midlands.	South.	Wales.	North.	Midlands.	South.	Wales.
MALES.																
All Ages (standardized)	1	4	3	2	1	3	4	2	1	3	4	2	2	3	4	1
0—	1	4	3	2	1	2	4	3	1	3	4	2	1	3	4	2
5—	1	4	2	3	1	2	3	4	1	3	4	2	2	3	4	1
15—	2	4	3	1	2	4	3	1	2	4	3	1	2	3	4	1
25—	2	4	3	1	3	4	2	1	1	3	4	2	2	3	4	1
35—	1	4	3	2	2	3	4	1	2	4	3	1	3	4	2	1
45—	1	4	2	3	2	3	4	1	2	4	3	1	2	4	3	1
55—	1	4	3	2	2	3	4	1	2	3	4	1	2	4	3	1
65—	1	4	3	2	2	3	4	1	1	3	4	2	2	4	3	1
75 and upwards	2	3	4	1	1	3	4	2	2	3	4	1	2	3	4	1
FEMALES.																
All Ages (standardized)	1	4	3	2	1	3	4	2	1	3	4	2	2	3	4	1
0—	1	4	3	2	1	2	4	3	1	3	4	2	1	3	4	2
5—	1	4	2	3	1	4	3	2	1	3	4	2	1	3	4	2
15—	2	3	4	1	2	3	4	1	2	3	4	1	3	2	4	1
25—	2	3	4	1	2	4	3	1	2	3	4	1	2	3	4	1
35—	2	4	3	1	2	3	4	1	2	3	4	1	2	4	3	1
45—	2	4	3	1	2	3	4	1	2	3	4	1	2	3	4	1
55—	1	4	3	2	1	3	4	2	2	3	4	1	2	4	3	1
65—	1	4	3	2	1	3	4	2	1	3	4	2	2	3	4	1
75 and upwards	1	3	4	2	2	3	4	1	1	4	3	2	2	3	4	1
PERSONS.																
All Ages (standardized)	1	4	3	2	1	3	4	2	1	3	4	2	2	3	4	1
0—	1	4	3	2	1	2	4	3	1	3	4	2	1	3	4	2
5—	1	4	2	3	1	3	4	2	1	3	4	2	2	3	4	1
15—	2	4	3	1	2	4	3	1	2	3	4	1	2	3	4	1
25—	2	3	4	1	2	4	3	1	2	3	4	1	2	3	4	1
35—	1	4	3	2	2	3	4	1	2	4	3	1	2	4	3	1
45—	1	4	3	2	2	3	4	1	2	3	4	1	2	4	3	1
55—	1	4	3	2	1	3	4	2	2	3	4	1	2	4	3	1
65—	1	4	3	2	2	3	4	1	1	3	4	2	2	4	3	1
75 and upwards	1	3	4	2	2	3	4	1	1	3	4	2	2	3	4	1

It will be seen that, for persons of both sexes, county borough mortality decreases from the North to the South of England at all ages except 15–35, at which it is higher in the South than in the Midlands; urban district mortality follows the same rule with a similar exception at 35–45 only; and rural district mortality at all ages except 35–75, where again the exception consists in the mortality of the South exceeding that of the Midlands. It thus appears that, under similar conditions of urbanization, the rule of decreasing mortality from North to South applies with few exceptions to all ages, the causes of the difference evidently affecting all periods of life impartially. Such exceptions to the rule as do occur are almost confined to the relative positions of the Midlands and South, the Northern rates being highest at all ages and in all classes of area for persons, and, except at 15–25 in the rural districts, for females, though for males the Northern is exceeded by the Southern rate at 25–35 in the county boroughs, and at 35–45 in the rural districts. As between the North and the Midlands Table XXVII contains but one unimportant exception to the rule for either sex at any age in any class of area. (The death-rate for rural females aged 15–25 was slightly higher in the Midlands than in the North.)

CAUSES OF DEATH.

The causes of death of males and females at 18 groups of ages are stated in Table 17 for the whole country, for London, for county boroughs in the aggregate, for other urban districts in the aggregate, and for rural districts in the aggregate; and in Table 17A further detail of age is shown for all causes of significance at ages 0–5. In Table 18 deaths from each cause distinguished are tabulated by month of occurrence and by sex, but not by age. This table differs from all others in referring to date of occurrence and not of registration. So far as they relate to the whole country these tables include all deaths, but deaths of non-civilians are excluded from all tables relating to portions of the country (*see* pages 1 and 116). The causes and ages of the latter are stated in Table 19 for the country as a whole. Table 17 includes the full International List of causes of death, as revised in 1920. Certain of the numbered items in it are subdivided, and where this occurs the letters (*a*), (*b*), etc., indicate subdivisions in international use, and numbers (1), (2), etc., subdivisions made without international agreement. All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar General in consultation with the Ministry of Health for use during 1921–30. The relation of this list to the detailed and

condensed International Lists as revised by the International Commission which met for the purpose at Paris, in 1920, is as follows :—

	Short List of Registrar General.	Corresponding Number.	
		Detailed International List.	Abridged International List.
1	Enteric fever	1	1
2	Small-pox	6	4
3	Measles	7	5
4	Scarlet fever	8	6
5	Whooping cough	9	7
6	Diphtheria	10	8
7	Influenza	11	9
8	Encephalitis lethargica	23	12 pt.
9	Meningococcal meningitis	24	12 pt.
10	Tuberculosis of respiratory system	31	13
11	Other tuberculous diseases	32–37	14 & 15
12	Cancer, malignant disease	43–49	16
13	Rheumatic fever	51	37 pt.
14	Diabetes	57	37 pt.
15	Cerebral hæmorrhage, &c.	74 & 75*a*	18 pt. 37 pt.
16	Heart disease	87–90	19
17	Arterio-sclerosis	91*b*	37 pt.
18	Bronchitis	99	20 & 21
19	Pneumonia (all forms)	100 & 101	22 & 23pt.
20	Other respiratory diseases	97, 98 & 102–107	23 pt.
21	Ulcer of stomach or duodenum	111	24 pt.
22	Diarrhœa, &c. (under 2 years)	113	25
23	Appendicitis and typhlitis	117	26
24	Cirrhosis of liver	122	28
25	Acute and chronic nephritis	128 & 129	29
26	Puerperal sepsis	146	31
27	Other accidents and diseases of pregnancy and parturition	143–145 & 147–150	32
28	Congenital debility and malformation, premature birth	159–161	33
29	Suicide	165–174	36
30	Other deaths from violence	175–203	35
31	Other defined diseases	2–5, 12–22, 25–30, 38–42, 50, 52–56, 58–73, 75*b*–86, 91*a*, 91*c*–96, 108–110, 112, 114–116, 118–121, 123–127, 130–142, 151–158, 162–164	2, 3, 10, 11, 12 pt., 17, 18 pt., 24 pt. 27, 30, 34, & 37 pt.
32	Causes ill-defined or unknown	204 & 205	38

The contents of every heading in both the short and the detailed list now in use and their relation to the items in the list previously used, will be defined in the Registrar General's "Manual of the International List of Causes of Death" (1920 Revision), which should be consulted in all cases where it is desired to ascertain the precise significance of any heading in the lists; but publication of this has unfortunately been delayed by the fact that the International List in its complete form has only recently been issued.

In Table 20, deaths of civilians are shown for different classes of area in various sections of the country, for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, age, and the short list of causes as above. For other administrative areas of over 10,000 population in 1921 deaths of civilians are shown in Table 21, arranged by sex and short list of causes, but without distinction of age.

In addition to the above tables, which relate exclusively to the year 1922, Table 4 contains a statement of the number of deaths registered in each year 1912–22 from each cause distinguished in Table 17, so far as available, with distinction of sex but not of age; while Table 5 states the corresponding crude death-rates per million living for persons, males, and females, so far as these can be regarded as of any significance. Similar tables (Nos. 8 and 9) state the mortality during the same eleven years of infants under one year of age from the causes of chief importance at that age, but without distinction of sex.

1. Enteric Fever.—The deaths classified to this heading during 1922 numbered 465, of which 3 occurred amongst the non-civilian population. Of these, 21, or 5 per cent., were returned as paratyphoid, as against 6 or 0·25 per cent. in 1911, and 18 or 3 per cent. in 1921, the only previous years for which the information has been published.

The resultant mortality, 12 per million living, is the lowest ever recorded in this country, comparing with a previous lowest record of 14 per million in 1920. The reduction is no longer due, as it was to some extent during the war, to decrease by foreign service of the most susceptible elements of the population. For each sex the crude rate in 1922 as in 1920 and 1921 remains unaltered by standardization, as was the case also before the war.

The death-rate in 1922 is only about one-quarter of what it was but ten years earlier, in 1911–14. Its distribution throughout the country is outlined in Table XXVIII.

Table XXVIII.—Enteric Fever, 1922 : Mortality (Unstandardized) per Million Civilian Population.

Class of Area.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	10	—	10
County Boroughs ..	10	12	16	7	11
Other Urban Districts	23	8	9	9	13
Rural Districts ..	17	10	16	11	13
All Areas	15	10	12	9	12

As in the seven preceding years, mortality was at its maximum in the smaller towns ; and as in each year but one (1917), from 1911 onwards, London returned the lowest rate for any class of area. Of the three sections of England distinguished, the Midlands returned the lowest rate. This in fact is the first year since 1911, when the rate for the South was lowest, that the mortality of the Midlands has not been the lowest of the four sections of the country compared. That for the North was the highest, as in each year 1911–22 except 1919, when that for Wales was slightly higher.

Table 23 shows that the rate of prevalence recorded in Table XXIX is the lowest for any year from 1912 onwards. In 1911, the first year for which the record is available, the rate was 0·38 cases per 1,000 population, as against 0·06 in 1922.

Table XXIX shows that the comparatively high mortality of the North was due partly to higher fatality of the cases notified, and partly to excess in the number of cases. Sometimes the one factor preponderates and sometimes the other, but as seen, the Northern excess itself remains very constant. Fatality was least in London, and, next to London, in the smaller towns, where, owing to excess in prevalence, particularly in the North, mortality was greatest.

Table XXIX.—Enteric Fever, 1922 : Prevalence and Fatality.*

Class of Area.	Cases per 1,000,000 Population.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	61	—	61	—	—	163	—	163
County Boroughs	53	51	81	50	55	190	233	193	148	201
Other Urban Districts ..	104	49	77	51	73	218	169	122	179	183
Rural Districts	77	57	67	46	63	218	177	235	237	209
All Areas	74	52	69	49	64	207	193	169	189	191

* Excluding non-civilian cases and deaths.

The fatality-rates returned for this and other notifiable diseases from 1911 onwards are compared in Table XXX. The rate for 1922, 191 deaths per 1,000 cases notified, is higher than that for 1921, when this rate, which had reached a maximum in 1918, fell to its lowest recorded level. These observations apply also to scarlet fever and diphtheria.

Table XXX—England and Wales : Fatality of certain Infectious Diseases (Deaths per 1,000 Notified Cases) in each year 1911–22.*

Year.	1. Enteric Fever.	6. Small-pox.	8. Scarlet Fever.	10. Diphtheria.	21. Erysipelas.	22. Poliomyelitis.	24. Meningococcal Meningitis.
1911	174	78	18·1	103	39	?	?
1912	191	73	18·6	96	39	?	?
1913	182	87	16·1	88	35	283	1,089
1914	194	62	17·2	99	42	348	1,257
1915	197	144	18·2	109	45	333	623
1916	188	107	17·8	103	40	270	704
1917	203	429	15·0	103	42	468	692
1918	206	32	20·0	109	46	1,013	767
1919	160	82	14·7	90	41	294	732
1920	171	114	12·0	81	52	404	911
1921	158	16	9·5	72	55	314	1,007
1922	191	28	12·7	78	53	383	1,046

* The rates in this table are given with reserve, being in some respects unsatisfactory. For the years 1911–13 cases of disease among non-civilians have been excluded from the notification returns, but it has not been possible to distinguish their deaths; for 1914 both cases and deaths relate to the total population; while for subsequent years the figures relate exclusively to the civilian population.

The numbers of small-pox cases in some years are too small to yield significant rates, but their basis of fact can be inferred from Table 4, and the rates quoted serve to bring out the extremely mild type of disease prevalent in 1921 and 1922. The rates for poliomyelitis include polioencephalitis, which was not distinguished in the notification returns until 1919. The extraordinary rise in 1918 is partly ascribable to certification of a number of deaths from the then "new disease,' encephalitis lethargica, as polioencephalitis, but mainly to a reduction in notifications unaccompanied by significant change in the number of deaths (*see* Report for 1918). The rates from this disease will be found to differ from some of those published in the Annual Reports of the Chief Medical Officer of the Ministry of Health, partly because polioencephalitis is included throughout and partly because special inquiries made by the Ministry in certain years have led to revision of the returns for those years, which is not embodied in Table XXX. The cases there referred to are similar for each year dealt with, being in all cases derived from the published notification returns. The latter source of discrepancy applies also to meningococcal meningitis, and in this case there is a possibility that some cases of posterior basal meningitis may not have been notified as cerebro-spinal fever though all such deaths are included in the table.

Table 7 shows that the highest mortalities returned by the larger administrative counties, *i.e.* those with a population exceeding 100,000, were 31 per million in the West Riding of Yorkshire, and 30 in Buckinghamshire.

The West Riding returned much the highest mortality amongst the counties in 1921 also, chiefly in consequence of an outbreak at Bolton-upon-Dearne. Continuance of the same outbreak (in the coal mining areas between Barnsley and Rotherham) into 1922 largely accounts for the maintenance of a comparatively high mortality in the West Riding. The following adjacent colliery districts returned the numbers of deaths stated in each case, out of an administrative county total of 47—Bolton upon Dearne (6), Wombwell (3), Worsborough (1), and Rawmarsh (3), or a total of 13 deaths in a population of 62,860

(Table 14), the corresponding mortality being 207 per million, as against 31 for the county as a whole. The highest rates for county boroughs are those of Dudley (52), Blackpool (41), Plymouth (40), Wolverhampton (38), and Stoke on Trent (37), the corresponding deaths numbering 3, 3, 8, 4, and 10 respectively. None of these boroughs returned especially high rates in 1921.

5. **Malaria.**—The number of deaths allocated to this cause, which gradually increased during the war from a total of 58 in 1912 and 1913 to 268 in 1919, has since then continuously declined to 123 in 1922 (Table 4). The proportion of females included in the total has been remarkably small throughout, showing the extent to which the mortality has been due to imported disease; and though the proportion is rather higher, at 10 deaths of females out of a total of 123, in 1922 than in the immediately preceding years, it has not yet returned to that generally met with before the war. It may therefore be inferred with considerable confidence, that many of these deaths are still due to war service, though the proportion is decreasing.

6. **Small-pox.**—The deaths certified as due to this cause in 1922 numbered 27, as against 5 in 1921, 30 in 1920, and 28 in 1919 (Table 4). Of these 20 are seen from Table 20 to have occurred in London (22 in Greater London), and 16 of these in Poplar, where the most fatal outbreak of the year took place. The incidence rate of the disease, as measured by notifications, is seen from Table 23 to have been higher in 1922 than in any of the preceding 10 years with which alone these records afford comparison; and this increase has made much further progress in 1923. The net number of notified cases is shown in Table 26 to have been 973, of which only 63 occurred in London, where the 20 deaths registered yield a fatality-rate of 317 per 1,000 cases, as against the general rate of only 28 shown in Table XXX, and of 8 per 1,000 for extra-metropolitan England and Wales. The rate for Poplar was 320 per 1,000 (50 cases with 16 deaths). This extraordinary contrast at once suggests that two different types of the disease prevailed in and outside London, and such may be seen from the particulars given in the Report of the Chief Medical Officer of the Ministry of Health to have been the case. The Poplar outbreak, which was the more serious on account of its origin in a case which remained undiscovered for two weeks amongst a population of 1,100 people in the local Poor Law Institution, was of the virulent type often associated with an Asiatic origin and reported, during 1922, from most tropical countries, whereas the disease prevalent in other parts of the country was of the mild type sometimes designated alastrim and often associated with an American origin. The world distribution of the two types during 1922 is detailed in the Annual Report of the Chief Medical Officer of the Ministry of Health. Of the 910 cases outside London, 568 were returned from Middlesbrough,

Nottingham C.B. and Administrative County, and Derby Administrative County (Table 28), and of these not a single one resulted fatally (Table 20).

Further particulars, including the vaccinal condition of fatal cases, will be found in the Report of the Chief Medical Officer of the Ministry of Health.

7. **Measles.**—The deaths registered from this cause numbered 5,694, corresponding to a mortality of 149 per million population. This represents a great increase over the figures for 1921, when deaths numbered only 2,241, the death-rate being 59. These figures were, however, low beyond all precedent, and the measles mortality of 1922 is placed in fairer perspective by noting that the death-rate at all ages has been lower in only two previous years, 1919 and 1921 (Table 6). For children under 15 years of age the death-rate of 527 per million is lower than that of any previous year except 1916, 1919 and 1921.

The distribution throughout the country of this mortality is stated in Table XXXI, in the form of death-rates per 100,000 living at ages 0–5. Deaths at these ages in 1922 formed 93 per cent. of the total, and statement in this form prevents the comparison being prejudiced by varying proportions of children in the populations compared.

Table XXXI.—Measles, 1922 : Mortality per 100,000 aged 0–5.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	375	—	375
County Boroughs ..	264	162	92	70	206
Other Urban Districts	153	70	56	59	94
Rural Districts ..	87	28	23	36	42
All Areas	203	90	198	54	154

As already noted, the rate in London was outstandingly high, being about two-and-a-half times the general average. Some London excess is indeed the rule, its death rate having been in excess of that of England and Wales in each year 1911–22, except 1919 and 1921, but the excess for 1922 is unusual. But when the effect of the heavy London mortality is excluded by comparison of rates for similar types of area in each case the table shows no exception to the rule of decrease from North to South which applies with great constancy year after year, or, for the various sections of the country dealt with, to that of decline with decreasing urbanization. The range of variation is

extreme, the death-rate of 375 per 100,000 in London contrasting with that of 23 in the adjacent rural districts of the South. All these are very constant features of this Table, but increase of mortality with increasing urbanization is the most constant of all, not a single exception to it having occurred during the 12 years 1911–1922, so far as county boroughs, other urban districts, and rural districts are concerned.

Table 7 shows that the London mortality was by far the highest for any administrative county, Flint, 215 deaths per million living at all ages, and Lancashire, 200, coming next to London's rate of 345. Amongst the county boroughs, however, 13 exceeded the London rate, the highest figures being 665 in Wigan, 587 in Rotherham, and 580 in Burnley.

Table 18 shows that mortality was highest in April, when 836 deaths occurred, and in May, with 778. Next to these months came December, with 613 deaths, the seasonal incidence of the mortality thus showing the double curve, with maxima in spring and early winter, characteristic of the disease.

8. **Scarlet Fever.**—The deaths allocated to this disease during 1922 numbered 1,382. They correspond to a rate of 36 per million total population at all ages, and of 106 per million at ages under 15 years.

Table 6 shows that for seven years in succession each of these rates has been much lower than any recorded previous to this period, the mortality being now trifling compared with that prevalent a generation ago. The increase from the minimum rate reached in 1917 is due entirely to greater prevalence, for Table 23 shows that the prevalence of the disease has almost exactly doubled since the minimum reached in 1917 and 1918, while Table XXX shows that the fatality-rate of 12·7 deaths per 1,000 notified cases, while higher than that for either of the two preceding years, was lower than any other on record before these. The mild type experienced in all recent years was thus well maintained in 1922.

Table XXXII.—Scarlet Fever, 1922 : Mortality per Million Living at Ages 0-15.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	211	—	211
County Boroughs ..	146	105	89	57	123
Other Urban Districts	108	80	75	138	95
Rural Districts ..	80	33	55	66	53
All Areas	124	76	133	100	109

Table XXXII shows that the mortality is of a markedly urban type, each section of England showing a great decline from large towns to rural districts. In Wales, on the other hand, the mortality of the county boroughs is lowest of all, but this is a feature frequently to be noted of Welsh mortality from various causes. Welsh mortality from scarlet fever was lowest in the county boroughs also in 1916 and 1917. In both the large and the smaller towns mortality regularly declines from the North to the South of England, in accordance with a general rule which has applied to this disease with but three slight exceptions during the last twelve years; but as in 1916 and 1917 this rule is broken for the rural districts, by excess of the Southern over the Midland rate. As in the case of measles, the London mortality is much the highest in the table, this being the second year in succession in which it has been almost double that of England and Wales, whereas immediately before the war the London rate was persistently below that for the country as a whole, which it has exceeded to any considerable extent during the past twelve years only in 1921 and 1922.

Table XXXIII.—Scarlet Fever, 1922 : Prevalence and Fatality.

	Cases per 10,000 Population aged 0–15 years.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	145	—	145	—	—	17	—	17
County Boroughs	117	111	118	72	113	15	11	9	8	13
Other Urban Districts ..	97	101	100	114	101	14	10	10	13	11
Rural Districts	75	67	69	67	69	13	8	11	14	11
All Areas	104	95	116	91	103	14	10	14	13	13

Table XXXIII shows that the excess mortality of London was due to excess both of prevalence and of fatality, each of which was higher for London than for any other population distinguished in the table. Apart from this London excess, prevalence differed little from North to South, but increased regularly with urbanization in all sections of England. Fatality, on the other hand, cannot be said to follow any definite rule. It increased regularly with urbanization in the North and Midlands but as regularly decreased in the South (apart from the London maximum) and Wales. Apart from London the variations of prevalence and of fatality alike, are not very great.

Table 7 shows that amongst counties with over 100,000 population, the London mortality of 66 per million was exceeded only by Glamorgan (70) and Cambridge (69). Of the County

Boroughs nine returned death-rates higher than that of London, those for Bootle (176), West Bromwich (131), and Reading (118), being highest. The Bootle maximum is the more notable in that for many years in succession scarlet fever mortality in this borough has been in excess of the county borough average. Along with the neighbouring boroughs of Liverpool, Birkenhead and St. Helens it formed a group of four county boroughs in 1918, all of which returned rates in excess of any other; but for Bootle alone of these has this excess, which first appeared for it, in any considerable degree, in 1917, been maintained till 1922. In each of these six years its mortality has been considerably more than double the county borough average. In 1917 its rate was the fourth highest in the list of county boroughs, in 1918 the second highest, in 1920 third, and in 1921 as well as 1922 highest of all.

9. **Whooping Cough.**—The deaths allocated to this heading numbered 6,370, 2,864 of males and 3,506 of females. The excess for females is shown by Table 4 to be a constant feature of this disease. Increase of the excess of deaths of females with increasing age is another constant feature. For 1922 the percentage excesses for females were 3 in the first twelve months and 33, 51, 50 and 30 per cent. in the second, third, fourth and fifth years respectively. After the third year the deaths are too few to exclude chance variations in the gradation, but for the decennia 1901–10 and 1911–20 increase of female excess with age is uninterrupted. The mortality was 167 per million total population at all ages, and 591 at ages under 15 years. These rates, though higher than that of each of the three preceding years, and particularly than the remarkably low rate for 1919, are shown by Table 6 to be lower than any for years prior to 1913, when a new chapter in the mortality of this disease may be said to have commenced.

The distribution of this mortality is indicated in Table XXXIV.

Table XXXIV.—Whooping Cough, 1922 : Mortality per 100,000 Living at Ages 0-5.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	280	—	280
County Boroughs ..	171	261	117	156	194
Other Urban Districts	187	160	114	167	162
Rural Districts ..	135	134	117	138	131
All Areas	171	188	190	156	180

It will be seen that, as usual, urban mortality was much in excess of rural.* Although this rule does not apply to the South of England in 1922, except as regards the high rate for London, it applies very constantly to the country as a whole, there being only two exceptions in the twelve years 1911–22 to the regular increase with urbanization of extra-metropolitan mortality for England and Wales as a whole.

As there are three possibilities of exception to the rule each year it has therefore held good in 34 cases out of 36. Increase from South to North has applied, without a single exception during the past twelve years, to the smaller towns, but in the cases both of the county boroughs and of the rural districts five exceptions to the rule have occurred out of the 36 possibilities in each case, one of these being the excess for the county boroughs of the Midlands over those of the North in 1922. The rate for London is the highest in the Table, and much above the average, as was the case also in 1918 and 1920, though its excess of 56 per cent. in 1922 is the highest from 1911 onwards. The age distribution of the deaths registered during 1922 shows a return towards normal from an exceptionally early type experienced in 1921. In that year 53.5 per cent. of the male and 47·2 per cent. of the female moratlity was at ages under one year, both of these being higher proportions than had been met with during any of the preceding ten years. In 1922 they fell to 45·0 and 38·0 respectively. For the most part the age distribution of whooping cough mortality remains fairly constant from year to year, but it seems to be subject to occasional temporary disturbances, like that of 1921. Thus in 1918 the type of distribution suddenly became older, as it suddenly became younger in 1921. In 1918 the proportion of deaths at ages under one year was lower for each sex, just as in 1921 it was higher, than in any other of the twelve years 1911–22, this statement applying, for 1918 only, to each of the three constituent age groups 0–3, 3–6 and 6–12 months, while for each age group after the first year the proportion was exceptionally high.

It is interesting to note that this sudden and very definite change of type occurred in the same year in which the age distribution of influenza mortality was so greatly and suddenly

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* This is exactly the reverse of the experience of the Registration States of the U.S.A., where mortality has been persistently higher in the rural districts. The following death-rates per 100,000 are quoted from the Statistical Bulletin of the Metropolitan Life Insurance Company for August 1923 :—

	Cities.	*Rural portions of States.*
1914	9·2	11·4
1915	7·9	8·6
1916	9·7	11·4
1917	9·4	11·6

changed in the opposite direction, the average age at death from whooping cough being raised while that from influenza was so greatly lowered. It may be remarked, however, that the two mortalities were not simultaneous, that from whooping cough occurring mainly in the first, and that from influenza in the last, six months of 1918.

The well-known excess mortality of females from whooping cough varies in an interesting—not to say puzzling—manner with age. In order to secure a firm basis of comparison the following sex ratios are derived from the records of the twenty years 1901–20; and in order to obtain some indication of the extent to which the sex ratio is liable to fluctuation the two decennia comprised have been kept separate. Deaths of females during this period in England and Wales, at the various ages distinguished, bear the following percentage ratios to those of males, the latter being taken as 100 :—

Months.				*Years.*					
0–3	*3–6*	*6–12*	..	*0–1*	*1–2*	*2–3*	*3–4*	*4–5*	*5–10*
				1901–1910.					
114	102	113	..	111	130	143	153	168	162
				1911–1920.					
117	102	113	..	111	131	146	153	154	144

It will be seen that in both decennia the same rule applies, and almost to the same extent in each. The female excess, considerable during the first three months of life, almost disappears during the second, but thereafter increases again throughout the whole of life—mortality at ages over ten is negligible. It has been suggested in America that the increase with age of the female excess is due to greater development of the larynx in boys, who are thereby better equipped for resistance to convulsive coughs. This explanation, however, seems inconsistent with the existence of substantial excess of mortality amongst males from laryngitis, and from croup at the time when croup was of importance, and it furnishes no obvious explanation of the curious drop in the female excess at 3–6 months.*

It may be of interest to show with what constancy this curious phenomenon recurs in our statistics by quoting the sex mortality ratios (mortality of females per cent. of that of males) of the

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* This feature is met with also in America, where tables which have been published in the Birth and Mortality Statistics issued by the Bureau of the Census from 1917 onwards, enable the following statement to be made of deaths of females from whooping cough per cent. of those of males for the 5 years 1917–21 :—

Months.				*Years.*					
0–3	*3–6*	*6–12*	..	*0–1*	*1–2*	*2–3*	*3–4*	*4–5*	*5–10*
104	98	112	..	106	127	144	143	139	127

past 12 years for the three sub-divisions of infancy employed. They are as follows :—

	0–3 months.	*3–6 months.*	*6–12 months.*
1911	122	111	119
1912	116	113	113
1913	115	129	108
1914	106	95	120
1915	115	102	106
1916	132	95	109
1917	132	99	120
1918	125	78	113
1919	96	95	105
1920	117	106	116
1921	128	103	103
1922	110	86	109

It thus appears that in six out of the twelve years dealt with deaths of males actually exceeded those of females in the second trimester, whereas of the other age groups distinguished 0–3 months alone furnishes an instance, and that only in one year, of male excess. Whatever its cause may be, this feature of the mortality of whooping cough is a very constant one, and therefore presumably not without significance.

As has frequently been pointed out in former reports, the proportion of deaths occurring at ages under one year persistently decreases with urbanization. During 1922 these deaths formed the following percentages of the whole in the various types of area :—

London	33
County Boroughs	40
Other Urban Districts	43
Rural Districts	50

In five out of the past 12 years (1911–22) the proportion of these early deaths has been higher in London than in the county boroughs, but in none of them has it been lower in the smaller towns than in the county boroughs, or in the rural districts than in the smaller towns. In view of the constancy of this difference, the excess of female over male mortality in the rural districts during 1911–20 at various ages has been taken out, to see whether any peculiarity existed in regard to it which could throw light upon the early incidence of mortality in these areas. At all ages up to three years the rural sex ratio is almost identical with that for England and Wales, but at 3–4 years it is 194 and at 4–5, 168, corresponding percentage ratios of female to male mortality for England and Wales during the same period being 153 and 154 respectively. Unfortunately lack of estimates of the age group populations at risk during the period dealt with has prevented further investigation of these differences.

One more peculiarity of whooping cough mortality may be mentioned, though its significance also is very doubtful. The mortality of illegitimate infants attributed to this cause was lower than that of the legitimate both in the first and in the second and third months of life in both 1911–15 and 1916–20. At ages over three months the usual rule of illegitimate excess applies. The rates per 1,000 births are as follows :—

	Under 4 weeks.	*4 weeks to 3 mos.*	*3–6 mos.*	*6–9 mos.*	*9–12 mos.*	*Total under 1 year.*
			1911–15.			
Legitimate infants ..	0·11	0·76	0·95	1·10	1·15	4·07
Illegitimate infants ..	0·07	0·62	1·10	1·33	1·14	4·26
			1916–20.			
Legitimate infants ..	0·08	0·56	0·66	0·79	0·87	2·96
Illegitimate infants ..	0·07	0·49	0·98	1·03	0·97	3·54

The law of female excess applies for the most part to legitimate and illegitimate infants alike, but it seems strange that the illegitimate should be relatively protected from the whooping cough risk during the first three months of their life, especially as mortality in these cases notoriously varies in accordance with efficiency of nursing and care generally. Possibly the lesser risk, in the case of the illegitimate, of domestic infection by a brother or sister may provide the explanation.

The highest death-rates in administrative counties, excluding those with less than 100,000 population, are shown by Table 7 to have been 622 per million at all ages in Cumberland, 270 in Staffordshire, 250 in Worcester and in the North Riding, and 249 in London. Similar figures for the county boroughs are West Ham 564, Great Yarmouth 423, and Stoke on Trent 404.

10. **Diphtheria.**—This heading now comprises 9a Diphtheria and 9b Membranous Laryngitis, of the list of causes in use during 1911–20. The remaining portion of the old heading " Diphtheria and Croup "—9c, Croup—has been transferred to 98 (2) Laryngitis, but the inquiry made as to such deaths has shown that for the most part they are not due to diphtheria (Table LV). The change is of very little numerical importance, the numbers of deaths classed to 9a, b and c in 1920 having been 5,641, 7 and 18. In other words, the term croup has practically died out from death certification, and when employed Table LV, and its predecessors show that as a rule it does not imply diphtheria.

The 4,075 deaths from diphtheria in 1922 include 2,048 of males and 2,027 of females. Table 4 shows that this is the only year since 1911 in which the deaths of females have not been in excess, and comparison of earlier reports shows that the rule of female excess has applied without exception since the disease was first distinguished in 1859. From Table 5 indeed it would appear that the mortality of males is greater, but the comparison here is between crude rates; and after standardization mortality is found to have been higher for females in each of the five decades 1861–1910, diphtheria in this respect resembling whooping cough, though the female excess is much less.

The death-rate for persons of both sexes, 107 per million living, is shown by Table 6 to be the lowest on our records—a position which could not be affected by inclusion with the 4,075 deaths from diphtheria of the 24 from croup in Table LV. None the less, the recent records for this disease are in marked contrast to the substantial declines recorded for the other infectious diseases in Table 6. For instance, the quinquennial record shows that the decline from 1891–5, which was continuous for diphtheria and croup up to 1911–15, was completely arrested in 1916–20. And much the same statements apply if mortality under 15 years of age is alone considered.

Table XXXV.—Diphtheria, 1922: Mortality per 100,000 living at ages 0–15.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	94	—	94
County Boroughs ..	27	33	43	40	31
Other Urban Districts	26	40	38	32	34
Rural Districts ..	22	21	19	37	22
All Areas	26	32	60	36	37

As in 1921, the outstanding feature in Table XXXV is the high mortality in London. In both years the London rate was more than twice that of the country at large, an experience not previously met with since 1897. But never before in the history of registration, which, for this purpose, dates back to 1859, when differentiation from scarlet fever was first applied to the London returns, has mortality in London been so much in excess of the general experience as in 1922—154 per cent. The nearest approach to this excess occurred in 1893, at the crest of a wave of heavy diphtheria mortality in London during the years 1892–99, the London excess in that year being 139 per cent. And it was only in the five years 1893–97 inclusive, that the London rate was

ever, before 1921, double that for the country at large. Table XXXVI shows that this great excess in London mortality has been due entirely to greater prevalence of the disease, for the fatality rate in London was slightly below that for England and Wales, indeed almost the lowest in the table. The recent history of diphtheria prevalence in London may be read in Table 23, which shows that while the rate for England and Wales has increased from 1·24 cases per 1,000 population in 1912 (1·33 in 1911) to 1·37 in 1922, or by 10 per cent., that for London increased from 1·57 (1·64 in 1911) to 3·37, or by 115 per cent., the London excess growing during the same period from 27 to 146 per cent. Table 28 shows that prevalence was greatest in the metropolitan boroughs of Bermondsey, where it reached the notable level of 9·05 cases per 1,000 population, and of Greenwich (6·85). To show how exceptional the record for Bermondsey is, it may be mentioned that Table 28 records but six administrative areas as returning a higher rate of prevalence, and of these the largest, Bungay (East Suffolk), had a population of but 3,165, whereas that of Bermondsey was 121,100. The rate for Bungay is based on 58 cases, and that for Bermondsey on 1,096.

Table XXXVI shows how far variation in mortality has been due to variation in prevalence and in fatality respectively.

Table XXXVI.—Diphtheria, 1922 : Prevalence and Fatality.

	Cases per 10,000 Population aged 0–15 years.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	129	—	129	—	—	75	—	75
County Boroughs	36	47	55	48	42	77	73	81	84	77
Other Urban Districts ..	33	52	51	39	44	84	80	78	86	81
Rural Districts	26	31	26	42	30	94	75	79	93	83
All Areas	33	44	81	42	50	81	77	76	88	78

There were proportionately fewer cases of the disease notified in the North than in the South of England, but their fatality was somewhat higher—an experience repeated year after year, the contrast being often much greater than in 1922. The fatality rate for the country at large, 7·8 per cent., is the lowest in Table XXX, except that for 1921, sharing with those for enteric fever and scarlet fever the common experience of slight increase from a minimum in 1921, following a maximum in 1918, for the twelve years which can be compared.

Table 7 shows that mortality was higher in London at 253 deaths per million living at all ages than in any other county, and that Middlesex (208) came next to London. These two counties returned high rates also in 1920, and in 1921 their mortalities were exceeded only by that of one county, Denbighshire. By

far the highest rate for any county borough was that of West Bromwich (577), Portsmouth (207) and Bristol (193) coming next. The exceptional mortality in West Bromwich was due quite as much to high fatality (197 deaths per 1,000 notified cases) as to high rate of prevalence, this being 2·92 per 1,000 population (Table 26) as against 1·15 for the county boroughs as a whole. This experience is exceptional, for it may be seen from Table XXXVI that while prevalence varies greatly for different populations, fatality as a rule varies little, In Bermondsey, for instance, where the London prevalence and mortality were both at their highest and where, as already noted, prevalence reached the exceptional level of 9·05 cases per 1,000 population (at all ages) as against 1·37 for England and Wales, fatality, at 85 deaths per 1,000 cases, compares with the general average of 78 for England and Wales and with 75 for London (Table XXXVI), the highest fatality ratio for any Metropolitan Borough being 123 in Chelsea—far below that for West Bromwich.

11. **Influenza.**—The deaths assigned to this cause numbered 21,498—10,353 of males and 11,145 of females—yielding a mortality of 563 per million persons living. This rate is not only the highest since the great epidemic of 1918–19, but suffices to include 1922 amongst the years of highest mortality since the commencement of our records in 1847. These years, with the mortality per million population recorded in each, are as follows :

1848	459
1891	574
1892	533
1900	504
1918	3,129
1919	1,217
1922	563

Except in the great epidemic, therefore, the death-rate of 1922 has only once been exceeded in our annals, and that but slightly, by what at the time was considered a very notable outbreak. Table 18, together with the corresponding table for 1923, shows that, of 21,370 deaths occurring during the year, 9,781, or 45·8 per cent., occurred in January, 6,016, or 28·2 per cent., in February, and 1886, or 8·8 per cent. in March, mortality thus being almost confined to the first three months of the year, in which 83 per cent. of the deaths occurred. The January maximum represents the crest of an epidemic wave which commenced towards the close of 1921 and ended towards the middle of 1922.

The age distribution of influenza mortality, which underwent a sudden and remarkable change at the outset of the great epidemic of 1918, has since then reverted in great measure to its previous type, but the characteristics then impressed upon it have by no means completely disappeared. Table I of the special Influenza Supplement to the Report for 1918 shows the age

distribution of the mortality (standardized, and, to permit of comparison throughout the period of the war, for females only), for each year 1890–1917. The average for the whole period compares as follows with the corresponding figures for 1918–22.

	1890–1917.	1918.	1919.	1920.	1921.	1922.
0–	104	249	193	186	169	176
15–	107	454	366	281	187	182
35–	181	176	197	201	184	191
55–	388	98	184	229	294	310
75–	220	23	60	103	166	141
	1,000	1,000	1,000	1,000	1,000	1,000

From this statement it appears that the movement of return towards the age distribution prevailing prior to the great epidemic, which showed itself during the years 1919–21 was arrested in 1922, when the proportion of deaths at ages under 35 was somewhat greater, and at those over 75 less, than in 1921.

On the other hand the experience of 1922 has reverted from that of the most recent preceding years towards an earlier normal in regard to sex incidence of mortality. From 1913 to 1920 the rate for males exceeded that for females by about 20 per cent., as also in 1890, but from 1892 to 1910 male excess was slight and inconstant. It has now fallen from 23 per cent. in 1920 to 10 per cent. in 1921 and 2 per cent. in 1922.

The distribution of influenza mortality throughout the country is indicated in Table XXXVII.

Table XXXVII.—Influenza, 1922 : Civilian Mortality per Million Living at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	575	—	575
County Boroughs ..	561	482	619	763	551
Other Urban Districts ..	600	499	501	783	562
Rural Districts	643	555	566	681	591
All Areas	585	509	561	748	565

On the whole the rates are fairly uniform, nor does any apparent significance attach to such variations as do occur, for these are not consistently maintained from year to year. In 1921, for instance, Wales returned the lowest rate for each class of area, in place of the highest, as in 1922.

The sub-division of influenza deaths into those with pneumonic, other pulmonary, and non-pulmonary complications, and without stated complication, was made in 1921 for the first time. It will be seen from Table 5 that as in 1921 pneumonic complications are commoner in males to a significant extent. This experience can be compared with that of 1911 and of the epidemic of 1918-19, when causes complicating influenza mortality were tabulated in detail. In both cases the proportion of deaths complicated by pneumonia was definitely in excess for males, and that of deaths with other pulmonary complications and without stated complication in some excess for females, as in 1921 and 1922. It appears, therefore, that even the minor sex differences brought out by Table 5 in regard to the two latter classes of returns may have significance.

23. **Encephalitis Lethargica.**—This malady first makes its appearance in the records for 1918 (Tables 4 and 5) when, however, nearly all the deaths were returned under other designations. Notifications among civilians, which increased from 541 in 1919 to 1,470 in 1921, fell to 454 in 1922 (Table 27); while deaths, after increasing from 284 in 1919 to 724 in 1921, fell to 337 in 1922, the fatality rising from 492 deaths per 1,000 notified cases in 1921 to 742 in 1922. Particulars of the sex and age incidence of mortality from this cause are shown for the second time in Table 17, as 1921 marks its first appearance in the list of causes of death there distinguished. As in 1921, deaths of females slightly exceeded those of males, and the mortality was widely spread over the greater part of life. In 1922, however, the deaths of only 4 infants are recorded, as against 18 in 1921. In both years old age is shown as having escaped almost completely. In both years the number of deaths was much the same for both sexes except at 20–45, at which deaths of females were 73 per cent. in excess in 1921, and 65 per cent. in 1922. The distribution throughout the country shows no striking differences either by section of the country or by class of area, rates per million living being as follows:—North 7, Midlands 11, South 10, Wales 7, London 11, County Boroughs 6, other Urban Districts 11, Rural Districts 10. Table 18 shows that mortality was widely distributed over the year, the January maximum which was clearly marked in 1921 being absent in 1922. Notifications also are shown by Table 24 to have been more evenly distributed throughout the year than in 1921, when more than half were made during the first eight weeks. In 1922 they were most numerous in spring.

24. **Meningococcal Meningitis.**—This title corresponds to 61A, cerebro-spinal fever, and 61B, posterior basal meningitis, of the 1911–20 List. Experience having shown that the differentiation of the two types of meningococcal infection yields results of somewhat doubtful value, this has been abandoned. The mortality of 1922 is the lowest since the epidemic outburst of

1915 (Table 5). It was as usual considerably higher for males, though the great male excesses recorded during the war, and caused mainly by deaths of non- civilians, have ceased to occur.

31–37. **Tuberculosis.**—The deaths assigned to tuberculous affections in the aggregate numbered 42,777—23,316 of males and 19,461 of females—or 99 more than those so classified in the previous year. The crude mortality, which in the case of this disease is little affected by standardization (Table XXXVIII), amounted to 1,121 per million, or a trifle less than that of the previous year, the slight increase in deaths having been more than compensated for by increase of population. The proportion of the total death-rate due to this cause was 8·8 per cent. The standardized mortality of 1,108 per million population (Table XXXVIII) is for the fourth year in succession the lowest yet recorded, each year since 1918, when the temporary rise associated with the war and the great epidemic of influenza reached its highest point, having returned a lower rate than its predecessor. Even though the decline since 1920 is but small, the fact that it has been uninterrupted suggests that the tendency to decline is real and continuous, and that the fall from the 1918 crest is not merely an accidental after-effect of the influenza epidemic resulting from the deaths in 1918 of sufferers from the disease who would otherwise have survived to swell the mortality of the next two or three years. For by 1922 the force of this influence must have been almost spent, and yet a further slight fall has occurred, instead of the rise to be expected if the cause of the previous fall (after 1918) had been of the adventitious nature considered. The fall in mortality is seen from Table XXXVIII to be confined entirely to the female sex, the standardized rate for males being slightly higher than in 1921, though lower than in any previous year. The return of ages at the recent census makes it possible, for the first time since its interruption in 1916 as a result of the war, to resume statement in this table of the mortality of males for separate periods of life between ages of 15 and 45. As for several years the mortality of females has shown increase over recent pre-war rates in early adult life—at 15–20 and 20–25 in 1921 and 1922 (Table XXXVIII) it is of interest now to note the movement for males of the same ages. This proves, as in the case of mortality from all causes (page 30), to be very similar to that for females. At 15–20 the pre-war (1912–14) rate was exceeded in 1921, though not in 1922, and at 20–25 it has been exceeded in both years, particularly 1922, while at all other ages, and particularly in early childhood and later life, the rates returned are now much below pre-war level. In these respects it will be noted that the movement of mortality from tuberculosis conforms very closely with that from all causes. Whatever the explanation, therefore, of the remarkable change in the age incidence upon females of mortality from tuberculosis, which has been, perhaps naturally, attributed to increased employment of girls and young

women in factories during the war, it appears to be one common also to males. But as factory employment of male youths cannot well have increased during the war, and as any effect of the kind upon females should be showing signs of diminution by 1922, it seems difficult to accept this explanation of the change which has occurred. Moreover, as pointed out in last year's Review, indications of the approaching change were in evidence, at least for females, even before the war.

Table XXXVIII.—England and Wales: Mortality from Tuberculosis (All Forms) per Million Population, 1912–14, 1921, and 1922.

	Males.			Females.			Persons.		
	1912–14	1921	1922	1912–14	1921	1922	1912–14	1921	1922
All Ages { Crude	1,569	1,267	1,279	1,167	998	976	1,361	1,126	1,121
All Ages { Standardized ..	1,546	1,238	1,246	1,168	1,010	984	1,347	1,118	1,108
0–	2,063	1,278	1,230	1,701	1,065	1,033	1,883	1,173	1,133
5–	566	406	379	572	409	396	569	408	388
10–	442	348	361	685	553	539	564	450	449
15–	927	962	913	1,214	1,385	1,275	1,071	1,176	1,095
20–	1,478	1,555	1,651	1,326	1,569	1,587	1,398	1,562	1,617
25–	1,774	1,527	1,577	1,369	1,342	1,287	1,561	1,426	1,419
35–	2,233	1,810	1,811	1,405	1,111	1,088	1,804	1,437	1,424
45–	2,437	1,819	1,835	1,208	873	859	1,798	1,330	1,329
55–	2,283	1,604	1,600	1,004	729	729	1,608	1,145	1,143
65–	1,421	1,034	1,069	767	577	657	1,057	780	841
75–	649	426	466	496	430	409	558	428	431
85 and upwards	260	322	117	246	216	230	251	251	193

31. **Tuberculosis of the Respiratory System.**—As a result of the revision of the list of causes of death in 1920 this heading no longer includes acute miliary tuberculosis, the classification thus reverting to that followed in this country prior to 1911. The distinction between acute and chronic forms of the disease is also abandoned. The substitution of respiratory for pulmonary in the title has no practical effect upon the contents, for laryngeal tubercle was already included under this heading, and in the year 1912, for which the deaths have been published in full detail, there was but one, returned as due to tubercle of the posterior nares, which would be included under the new but excluded from the old heading.

The 33,919 deaths from respiratory tubercle form 79 per cent. of the total allocated to tuberculosis, and 7·0 per cent. of those from all causes.

The distribution of this mortality by class of area as well as by sex and age is shown in Table XXXIX—a form of presentation to which the results of the 1921 census make it possible now to revert for the first time since its abandonment in consequence of the unmeasured disturbance of local populations caused by the war.

The features of this table, so far as England and Wales is concerned, generally resemble those of Table XXXVIII, and have been already in part discussed in connexion therewith. It may, however, be pointed out that for persons of both sexes the standardized mortality has not fallen in 1922, so that the decrease of the same rate noted in the case of tuberculosis generally is entirely due to fall in mortality from non-respiratory tubercle.

Table XXXIX.—Tuberculosis of the Respiratory System.—Mortality at Different Ages, 1922.

	Mortality per 100,000 Civilians Living at Various Age Groups.						Ratio per cent. of Mortality in England and Wales.				
	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.											
All Ages—											
Crude	103	136	125	88	72	111	132	121	85	70	108
Standardized ..	97	124	117	84	71	104	128	121	87	73	107
0—	16	13	24	14	9	18	81	150	88	56	113
5—	11	10	16	10	8	12	91	145	91	73	109
15—	106	129	124	94	83	112	122	117	89	78	106
25—	145	160	163	128	135	148	110	112	88	93	102
35—	170	206	216	144	115	184	121	127	85	68	108
45—	172	257	214	141	104	189	147	124	82	60	110
55—	149	247	182	129	83	169	166	122	87	56	113
65—	94	163	117	80	58	108	173	124	85	62	115
75 & up ..	32	93	33	23	22	37	291	103	72	69	116
FEMALES.											
All Ages—											
Crude	77	84	84	72	68	79	109	109	94	88	103
Standardized ..	74	78	81	70	68	76	105	109	95	92	103
0—	16	15	21	14	11	17	94	131	88	69	106
5—	22	18	29	20	17	23	82	132	91	77	105
15—	124	126	132	120	113	126	102	106	97	91	102
25—	117	112	124	114	116	118	96	106	97	99	101
35—	100	107	112	89	91	102	107	112	89	91	102
45—	77	97	82	68	69	79	126	106	88	90	103
55—	62	84	64	54	56	63	135	103	87	90	102
65—	53	80	48	49	51	53	151	91	92	96	100
75 & up ..	26	44	20	30	19	28	169	77	115	73	108
PERSONS.											
All Ages—											
Crude	89	108	104	80	70	94	121	117	90	79	106
Standardized ..	85	100	98	76	70	89	118	115	89	82	105
0—	16	14	23	14	10	18	88	144	88	63	113
5—	17	14	22	15	12	18	82	129	88	71	106
15—	115	127	128	108	98	120	110	111	94	85	104
25—	130	133	141	120	125	131	102	108	92	96	101
35—	132	151	160	115	102	140	114	121	87	77	106
45—	122	172	146	103	86	132	141	120	84	70	108
55—	103	160	120	90	69	113	155	117	87	67	110
65—	71	116	78	62	54	77	163	110	87	76	108
75 & up ..	28	61	25	27	20	32	218	89	96	71	114

The relation of phthisis mortality to urbanization is expressed by the regular decline of the standardized rate for persons from a maximum of 100 per 100,000 in London to a minimum of 70 in the rural districts. It may be noted, however, that it is only to males that the London maximum applies, the standardized rate for females being rather higher in the county boroughs. Otherwise the decline with decreasing urbanization is quite regular for each sex. The London maximum applies to both males and females at all ages from 45 upwards, but on the question whether this feature is due to peculiarity of environment or of type of infection in London no light is thrown by the table. Mortality is at a minimum in the rural districts except at 25–35, when the rate for persons, 125, exceeds that of 120 for the smaller towns. This rule applies to males, but for females of all ages between 25 and 75 the rural rates are slightly higher than those of the smaller towns. If these prove to be permanent features of the table they will have to be taken into account in future discussion of migration as the explanation of such differences in mortality between town and country, but no present attempt can be made here to pursue this subject further.

38. **Syphilis.**—The crude mortality directly attributed to this disease, 39 per million persons living, 47 for males and 31 for females, is seen from Table 5 to be the lowest recorded for either sex since 1911 ; and reference to similar tables in earlier reports reveals no year in which the rate recorded, both for males and females, did not exceed that of 1922. It is evident, therefore, that not only has the temporary increase of mortality from this cause, associated with the onset of the war, which culminated in 1917, totally disappeared, but that there is strong *prima facie* evidence that the national scheme for dealing with venereal disease, which resulted from the labours of the Royal Commission of 1916 and which is described in the Report of the Chief Medical Officer of the Ministry of Health, is already having a definite positive effect. As the majority of the deaths attributed to this disease, 59 per cent. in 1922, are of infants under one year of age, mortality from this cause has in the past been largely influenced by the birth-rate, tending to rise and fall with it. Hence, it is of interest to note that the infantile mortality of 1·12 deaths per 1,000 births is much the lowest in Table 9. It is also the lowest for any year since, at least, 1905, though the rate for 1910, 1·15, which happened to be exceptionally low, was not much higher. The sudden and substantial fall from 1·43 in 1921 to 1·12 in 1922 certainly seems to indicate that the treatment under the national scheme of syphilitic women during pregnancy is already producing a very definite effect. The section of Sir George Newman's Report to which reference has been made speaks of the growing impression amongst medical officers concerned in the campaign of its effect in diminishing the incidence of venereal disease ; and there can be little doubt that the combined mortality

experience of the profession at large, as embodied in the registration returns, points strongly in the same direction, though of course the possibility must be borne in mind that the virulence of the prevailing type of disease may be diminishing.

The more comprehensive death-rate obtained by including deaths from tabes dorsalis, general paralysis of the insane, and aneurysm, as well as those directly attributed to syphilis, stands at 131 per million as against 132 in 1921 and 136 in 1919 and 1920. In 1917 it was 176 per million, and from 1901, when the record is first available, till 1918 it only varied between that figure and 155 (in 1910), so the returns for the last four years represent a very definite decline. The slight decline in 1922 has occurred notwithstanding increases, in each case applying to both sexes, in the mortality from tabes, general paralysis, and aneurysm (Table 5). These, however, being all very late manifestations of the disease must provide a much less delicate index of the effect of recent treatment than the mortality from syphilis itself and especially infantile syphilis, to which reference has just been made. Moreover, it may be hoped that recent advance in the treatment of general paralysis, much the most important contributor to the combined mortality of the three para-syphilitic diseases dealt with, will soon have a definite effect upon the mortality attributed to it.

41 (1). **Vaccinia.**—Four deaths, three of infants under one year of age and one at 55, have been classed to this cause as against three in 1921. In addition to these, two deaths, at 6 months and 18 months, were allocated to septic infection, and one at 4 months to eczema, following vaccination. In the case of one death at 4 months allocated to vaccinia it seems very possible that erysipelas was regarded as the determining cause of death, the medical certificate reading "(1) vaccinia 17 days, (2) erysipelas 6 days."

43–49. **Cancer.**—The deaths ascribed to cancer during 1922 number 46,903—21,266 of males and 25,637 of females. For both sexes these numbers are the highest yet recorded.

Of these deaths 34,264 were referred to carcinoma, 2,604 to sarcoma, and 10,035 to "cancer" not otherwise defined. Both the carcinoma and the sarcoma figures are the highest hitherto recorded for each sex.

Table XL shows for England and Wales, and for different classes of its local areas distinguished by urbanization the standardized death-rate from malignant disease for each sex, and the group rates for persons of different ages from which these are derived, for 1922, and, as a basis of comparison for England and Wales only, similar rates for 1921 and for the four latest pre-war years jointly, 1911–14. When calculated on the revised age-group populations afforded by the census the standardized rate for males in 1921 is reduced from 988, the rate shown in the Review for that year, to 951 per million, and

that for females from 1,028 to 971. From these levels the rate for males rose by about 1 per cent. in 1922 to 960, and that for females fell by 0·7 per cent. to 964. The 1922 rate for males may probably represent the highest level yet attained—it is impossible to speak with certainty owing to the difficulties of age-group population estimates for the war years—but that for females is seen to be definitely below the pre-war level. In fact, owing to an increase for males of 5 per cent. above this level and a decline for females of 3 per cent. below it, the rates for the two sexes are now for the first time almost equal, the excess for females having fallen from 9 per cent. in 1911–14 to under 1 per cent. in 1922. Such an experience is uncommon, though not entirely unknown, in the records of other countries, in most of which, as in England and Wales at earlier dates, excess mortality for females is much greater than even the 9 per cent. recorded in the table for 1911–14.

Table XL.—Cancer.—Mortality per 100,000 living, 1911-1914, 1921 and 1922.

Age.	England and Wales.			1922.				
	1911–1914	1921	1922	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.								
All Ages—								
Crude	93	115	118	137	116	114	115	118
Standardized	91	95	96	113	102	95	80	101
0–.. ..	2	2	3	3	3	3	2	3
15–.. ..	4	4	5	6	5	5	3	5
25–.. ..	11	11	12	13	12	11	11	12
35–.. ..	44	40	42	56	45	40	34	44
45–.. ..	173	164	163	202	184	153	120	174
55–.. ..	453	467	479	580	522	472	377	509
65–.. ..	803	879	868	967	938	851	768	904
75 and up ..	962	1,105	1,114	1,301	1,036	1,177	1,051	1,143
FEMALES.								
All Ages—								
Crude	113	128	129	131	124	128	135	127
Standardized	99	97	96	99	100	96	90	98
0–.. ..	2	2	2	3	2	2	2	2
15–.. ..	3	3	3	3	3	3	4	3
25–.. ..	16	16	16	18	18	14	16	16
35–.. ..	83	77	75	79	83	73	64	78
45–.. ..	234	219	215	223	230	207	197	219
55–.. ..	460	439	427	445	447	425	389	437
65–.. ..	728	738	746	725	758	761	720	754
75 and up ..	942	1,018	1,025	1,088	990	1,057	992	1,037
PERSONS.								
All Ages—								
Crude	104	122	123	134	120	122	125	123
Standardized	95	96	96	106	101	95	85	99
0–.. ..	2	2	2	3	2	2	2	2
15–.. ..	4	3	4	4	4	4	3	4
25–.. ..	13	14	14	16	15	13	14	14
35–.. ..	64	60	60	69	65	58	50	63
45–.. ..	205	192	190	213	208	181	159	197
55–.. ..	457	452	451	508	482	447	383	471
65–.. ..	761	801	800	829	837	801	743	819
75 and up ..	950	1,052	1,059	1,163	1,007	1,102	1,017	1,076

The age distribution of the change in mortality since 1911–14 is noteworthy. The rates for males have fallen at each age 35–55, and risen at all other ages, the chief increases being in old age, particularly at 75 and upwards. And similarly for females mortality has fallen at all ages 35–65, and risen at higher ages, and in their case also chiefly at 75 and upwards. This tendency to postponement of the age of death from cancer independently of the increasing age of the population has long been a feature of our records, especially for females, and it has been noted also in various other countries, being commented on, for instance, in recent reports on New Zealand statistics. The following figures for those States of the American Union whose registration history dates back to 1900 have been kindly supplied by the Washington Census Bureau.

	Cancer Death-rate per 1,000,000 population.						1910 per cent. of 1900.		1920 per cent. of 1910.	
	Males.			Females.						
	1900.	1910.	1920.	1900.	1910.	1920.	Males.	Females.	Males.	Females.
35- ..	283	332	379	790	893	915	117	113	114	102
45- ..	839	1,072	1,208	1,974	2,319	2,309	128	117	113	100
55- ..	1,902	2,731	3,384	3,314	4,127	4,516	144	125	124	109
65- ..	3,791	4,958	6,414	4,631	6,192	7,305	131	134	129	118
75 and over.	5,085	6,964	9,159	5,994	8,720	10,208	137	145	132	117

In this American experience it will be seen that mortality has increased practically at all ages dealt with, but the resemblance to the English experience lies in the fact that for both sexes and at both periods compared the increase becomes greater with advancing age. The absence of increase between 1910 and 1920 for females aged 45–55 corresponds with the English decrease for females aged 35–65 between 1911–1914 and 1922. In other respects also the two experiences are very similar. It will be noted, for instance, that in both alike the greatest excess mortality of females occurs at 35–45, though at this as at other ages the excess is greater in the American figures. That America, however, in this as in other respects connected with cancer mortality, is following in the wake of England and Wales, may easily be shown by tabulating the sex ratios of the mortalities recorded above. The rate for females in the Registration States, per cent. of that for males at each age and date, is as follows :—

	1900.	1910.	1920.
35–	279	269	241
45–	235	216	191
55–	174	151	133
65–	122	125	114
75 and over	118	125	111

The only exception to the otherwise uniform rule of decreasing female excess is at 65 and over in 1910, and it seems probable, in the light of these figures, that before very long the excess mortality of females may disappear in America as it has already practically done here.

The female excess in the American figures also decreases most uniformly with age, but never becomes negative at any age. Here again comparison with Table XL shows that the American experience suggests a less developed form of the English as may be shown by the following statement of sex mortality ratios for England and Wales, prepared from Table XL, in similar form to that just given for the Registration States.

	1911–14.	1921.	1912.
35—	189	193	179
45—	135	134	132
55—	102	94	89
65—	91	84	86
75 and over ..	98	92	92

In this country also female excess tends to diminish with age, but to such an extent that for all the years covered by the table it becomes negative at the higher ages, though less so after 75 is passed. It is evident that in this respect also America is repeating English experience at an interval of only a few years. It may be seen from Table 10 of the Decennial Supplement to the 75th Annual Report of the Registrar-General, part 3, that in this country the law of female excess applied without exception at all ages from 25 upwards in each decennium 1851–60 to 1891–1900, male excess appearing for the first time at age 65–75 in 1901–10. The decrease in female excess there shown is so steady and so long continued as to leave no doubt as to the reality of this tendency in the returns. The sex ratios (female per cent. of male) of the standardized rates for all ages given in this table are as follows :—

1851–60	213
1861–70	205
1871–80	186
1881–90	159
1891–1900	138
1901–1910	120

and it has already been seen that for 1922 the ratio is 100.

Table XL shows cancer mortality as decreasing with decreasing urbanization, in 1922, from a maximum of 106 per 100,000 in London to a minimum of 85 in the rural districts. The London maximum applies, however, only to males, the standardized rate being higher for females in the county boroughs.

As the proportionate mortality of males has been seen to be increasing both in this country and in America, it may be of

interest to note whether this development has proceeded further in London and the great towns than in the country districts.

The following statement of female per cent. of male mortality in 1922, derived from Table XL, strongly suggests that this is so, for it shows that the proportion borne by the mortality of females to that of males increases regularly with decreasing urbanization.

	London.	County Boroughs.	Urban Districts.	Rural Districts.	England and Wales.
25–	138	150	127	145	133
35–	141	184	183	188	179
45–	110	125	135	164	132
55–	77	86	90	103	89
65–	75	81	89	94	86
75 and over	84	96	90	94	92
All ages .. (Standardized)	88	98	101	113	100

The proportion of mortality amongst females at all ages to that of males steadily rises from 88 per cent. in London to 113 in the rural districts, and while the same rule does not apply without exception to the separate age periods, these exceptions are few.

There is only one age period, 25–35, at which the lowest proportion of male to female mortality is not returned by London, and only two, 25–35 and 75 and upwards, at which the highest is not returned by the rural districts, as in the case of the standardized rates for all ages.

We find, therefore, that a precisely similar contrast exists in this respect between (*a*) England and Wales and the United States, (*b*) England and Wales in 1922 and in the past, (*c*) the United States in 1920 and in the recent past, and (*d*) the great towns of England and Wales, particularly London, and its rural districts. This is evidently more than a coincidence. Two possible explanations suggest themselves.

1. Taking the figures at their face value we may suppose that the increase in cancer mortality, which on this assumption is a real one, is in some way a consequence of modern conditions of life, that the effect of these is at a maximum in the cities, and that it tells more severely upon males.

2. Alternatively we may suppose that owing to the much larger proportion of deaths from cancer of inaccessible sites amongst males (Tables XXXVIII and XXXIX of the Review for 1921, for instance, show that in 1911–20, 63 per cent. of cancer deaths amongst males, and only 49 amongst females, were from growths in inaccessible sites, as classified in Table LV, Report

for 1917) the disease is more difficult to recognise in the male sex, that the real mortality is, contrary to our traditional belief, higher for males, and that the practical recognition of this fact in the death returns is growing with advance in medical knowledge, and has made somewhat greater progress in the great towns than in the country districts of England, and in England than in America.

Even on the latter supposition, it does not, of course, follow that medical skill has reached a higher level here than in the United States. On the safer assumption that no distinction of the kind can be made between the two countries one would still expect progress in diagnosis to be somewhat greater on this side of the Atlantic. For if the difference between the towns and rural districts of England is caused by the greater facilities for diagnosis possessed by the former, in the shape of more ready access to hospitals and consultants, then it seems only natural that a similar difference should exist between the more urbanized country, England and Wales, and the less urbanized Registration States. And this difference in urbanization between the two countries is equally available to account for the difference between their experiences in this matter on supposition no. 1 above, since in the more urbanized country the specially adverse effect upon males of modern conditions of life will have been carried further than in the less urbanized, provided, of course, that this effect is of equal force in both countries.

It may be added that the two explanations suggested of the change which is taking place are in no way mutually destructive, and that accordingly, both may apply, in greater or less degree, simultaneously.

Further, it has to be remembered that the extension and improvement of the surgical treatment of cancer as far as it is as yet a factor in the matter is probably doing more to reduce the mortality of females than of males Consideration of the chief sites of the disease in males does not suggest that the prolongation of life by operation in their case can be substantial, but the reverse of this statement applies to females. The recently published report on cancer of the breast by Dr. Lane-Claypon (Ministry of Health, Reports on Public Health and Medical Subjects No. 28) shows that in patients operated upon by the " complete " operation while the disease is still local " the expectation of life from the onset of the disease may be on the average as much as ten years more than in unoperated persons " (page 120). Unfortunately the proportion of patients who come to operation at so early a stage of the disease is as yet very small, so that the actual effect of surgical treatment of cancer upon the sex distribution of its mortality can also be as yet but slight; but the facts that such results are possible for a form of the disease accounting for almost

19 per cent. of the total mortality of women, and that the possible reduction by surgical means of the mortality of males from the chief forms of the disease enumerated in Table XLI is, as yet, unfortunately small in comparison, show that the influence of progress in the surgical treatment of cancer must for the present be in the direction of increase in the proportion of male mortality.

The change in sex ratio described above is naturally not limited to the experience of England and Wales and the United States. Comparison of the relevant data collected by Mr. F. L. Hoffman in his book on "The Mortality from Cancer throughout the World" (1915), shows that a similar change applies to most European countries, but that it has been less uniform and on the whole less extensive than in the experience of the two chief English-speaking populations. Of the countries tested, Denmark (cities), Bavaria, Switzerland, Austria and Italy record a decrease, and Prussia and Holland an increase, in the proportion of female to male death-rate. The increase in Prussia, however, has been offset by a larger decrease, over the whole period dealt with, in Berlin, which in this respect conforms with the experience of Paris, Buda-Pest and London. The ratios given by Hoffman's figures are as follows, no attempt having been made to extend them so as to cover the difficult period of the war :—

Cancer. Sex Mortality-Rates, taking Mortality of Males as 100, that of Females was in :—

Norway.		*Denmark (Cities).*		*Bavaria.*		*Prussia.*	
1896–1900 ..	94	1896–1900 ..	119	1886–1890 ..	133	1898–1900 ..	115
1901–1905 ..	96	1901–1905 ..	120	1891–1895 ..	128	1901–1905 ..	116
1906–1910 ..	101	1906–1910 ..	113	1896–1900 ..	125	1906–1910 ..	118
..		..		1901–1905 ..	128	..	
1911 ..	90	1911 ..	120	1906–1910 ..	125	1911 ..	119
1912 ..	91	1912 ..	107	..		1912 ..	119
..		..		1911 ..	124	..	
..		..		1912 ..	124	..	

Holland.		*Switzerland.*		*Austria.*		*Italy.*	
1901–1905 ..	98	1881–1885 ..	110	1901–1905 ..	114	1896–1900 ..	136
1906–1910 ..	99	1901–1905 ..	97	1906–1910 ..	110	1901–1905 ..	129
..		1906–1910 ..	97	..		1906–1910 ..	124
1911 ..	96	..		1911 ..	107	..	
1912 ..	103	1911 ..	96	1912 ..	105	1911 ..	124
1913 ..	101	1912 ..	92	..		1912 ..	120

Paris.		*Berlin.*		*Frankfurt A/M.*		*Buda-Pest.*	
1896–1900 ..	146	1881–1885 ..	158	1892–1895 ..	152	1881–1885 ..	214
1901–1905 ..	146	1886–1890 ..	157	1896–1900 ..	139	1886–1890 ..	181
1906–1910 ..	143	1891–1895 ..	137	1901–1905 ..	137	1891–1895 ..	180
..		1896–1900 ..	129	1906–1910 ..	137	1896–1900 ..	169
1911 ..	130	1901–1905 ..	129	..		1901–1905 ..	138
1912 ..	137	1906–1910 ..	131	1911 ..	142	1906–1910 ..	137
1913 ..	126	..		1912 ..	123	..	
..		1911 ..	135	1913 ..	141	1911 ..	141
..		1912 ..	131	..		1912 ..	128

London.	
1881–1885 ..	180
1886–1890 ..	157
1891–1895 ..	147
1896–1900 ..	132
1901–1905 ..	124
1906–1910 ..	110

In the case of populations where the ratio starts at a high level, like Buda-Pest and London, the fall during the period covered is very rapid, but in Prussia and Holland, where some increase has occurred, the ratio at the starting point was low, the general tendency being towards approximation, for 1911–13, to a common level of about 100–120. This seems to suggest that the remarkable differences in this respect of 25–30 years ago may have been in large measure fictitious, the later and presumably more reliable records for most countries pointing towards approximate sex equality. In these figures the comparison is between crude rates of mortality; and it may be expected that if standardized rates were available the percentages for females would be somewhat lower than those shown, since Table XL shows that while the ratio for England and Wales in 1922 is 100 on the standardized rates it is 109 on the crude, this effect being due to the comparatively large numbers of females living at the ages chiefly affected by cancer.

Table XLI.—England and Wales, 1922—Sites of Fatal Cancer.

		All Ages.	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
		MALES.															
	All Sites	21,266	66	67	152	311	368	691	1,311	2,205	3,146	3,646	3,580	2,903	1,823	756	241
43	Lip	265	1	—	—	1	1	3	8	14	38	29	38	40	36	37	19
	Tongue	1,111	—	—	—	5	6	28	74	127	219	225	170	143	71	36	7
	Mouth and Tonsil ..	549	—	4	4	3	7	14	38	66	105	96	97	63	33	14	5
	Jaw	490	1	3	2	5	2	7	35	56	85	81	76	63	42	26	6
	Total	2,415	2	7	6	14	16	52	155	263	447	431	381	309	182	113	37
44	Pharynx	271	—	2	3	2	2	5	23	30	49	60	41	31	21	2	—
	Œsophagus	1,475	—	—	1	6	6	19	93	209	309	266	260	175	92	29	10
	Stomach	4,604	1	—	4	49	105	196	304	510	705	799	813	599	374	119	26
	Liver and gall bladder..	1,829	4	4	1	22	24	45	84	163	247	330	333	275	202	73	22
	Total	8,179	5	6	9	79	137	265	504	912	1,310	1,455	1,447	1,080	689	223	58
45	Mesentery and peritoneum	119	3	3	3	5	6	12	7	13	16	20	16	8	5	1	1
	Intestines	2,503	4	4	8	39	41	82	132	217	292	436	449	412	262	100	25
	Rectum	2,168	1	—	4	22	27	49	114	194	309	383	389	351	204	93	28
	Total	4,790	8	7	15	66	74	143	253	424	617	839	854	771	471	194	54
47	Breast	42	—	—	—	1	1	—	2	11	5	11	5	1	2	2	1
48	Penis and scrotum ..	212	—	—	1	—	3	16	19	19	23	30	31	32	22	10	6
	Other skin	515	—	4	4	9	6	14	24	32	36	56	68	85	71	62	44
	Total	727	—	4	5	9	9	30	43	51	59	86	99	117	93	72	50
49	Larynx	684	—	1	—	1	4	23	52	100	126	142	108	72	39	14	2
	Lung and pleura ..	423	4	1	11	15	21	27	44	71	63	56	52	37	14	6	1
	Pancreas	498	—	—	1	12	16	18	45	60	72	82	86	56	38	9	3
	Kidneys and suprarenal glands	241	27	8	3	7	14	11	18	33	33	31	24	20	9	2	1
	Bladder	641	1	1	1	3	5	15	20	51	70	127	139	95	70	33	10
	Prostate	840	—	—	2	—	—	5	19	39	82	134	167	186	136	52	18
	Testes	117	4	—	10	30	15	14	7	6	8	4	10	5	2	1	1
	Brain	66	1	5	5	14	8	7	6	8	5	4	3	—	—	—	—
	Bones (jaw excepted)..	312	4	18	48	20	14	19	23	23	41	25	28	23	17	7	2
	Other specified organs..	720	7	5	26	34	26	44	77	87	114	112	85	59	29	14	1
	Abdominal cavity, organ unspecified	117	—	2	1	2	—	4	4	8	22	19	19	20	11	5	—
	Other and undefined ..	454	3	2	9	4	8	14	39	58	72	88	73	52	21	9	2
	Total	5,113	51	43	117	142	131	201	354	544	708	824	794	625	386	152	41

Table XLI.—England and Wales, 1922—Sites of Fatal Cancer—*cont.*

		All Ages.	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
		FEMALES.															
	All Sites	25,637	53	46	120	515	734	1,428	2,122	2,872	3,145	3,548	3,615	3,317	2,430	1,172	520
43	Lip	19	—	—	—	—	—	—	1	3	—	4	5	1	3	1	1
	Tongue	98	—	—	—	—	1	8	7	11	14	13	10	10	14	6	4
	Mouth and Tonsil ..	84	1	1	1	2	2	1	11	10	9	12	14	4	10	4	2
	Jaw	160	1	2	4	1	2	9	19	17	16	22	23	21	13	7	3
	Total	361	2	3	5	3	5	18	38	41	39	51	52	36	40	18	10
44	Pharynx	71	1	1	1	2	5	10	5	10	9	7	8	4	6	—	2
	Œsophagus	459	—	—	—	7	18	30	53	59	54	49	60	58	39	19	13
	Stomach	3,991	—	—	2	38	61	148	234	388	463	610	713	633	456	179	66
	Liver and gall bladder..	2,486	3	3	—	33	32	55	109	201	281	383	479	437	291	127	52
	Total	7,007	4	4	3	80	116	243	401	658	807	1049	1260	1132	792	325	133
45	Mesentery and peritoneum	242	1	3	2	4	6	8	22	32	48	28	30	28	17	8	5
	Intestines	3,142	1	1	7	38	55	91	147	250	321	459	481	575	427	213	76
	Rectum	1,580	—	—	9	24	27	74	87	141	202	220	234	237	198	90	37
	Total	4,964	2	4	18	66	88	173	256	423	571	707	745	840	642	311	118
46	Ovary and Fallopian tube	801	1	—	22	25	37	67	99	134	121	99	85	60	21	21	9
	Uterus	4,228	—	—	11	133	194	379	525	634	595	583	500	356	210	76	32
	Vagina and vulva ..	325	1	—	—	6	6	11	16	30	28	46	53	58	41	17	12
	Total	5,354	2	—	33	164	237	457	640	798	744	728	638	474	272	114	53
47	Breast	4,826	1	—	2	85	201	386	549	652	611	603	503	481	401	228	123
48	Skin	439	—	—	3	13	9	8	19	16	30	37	52	66	69	77	40
49	Larynx	183	—	—	2	4	9	19	20	30	29	25	14	16	11	3	1
	Lung and pleura ..	189	—	1	2	9	5	10	27	23	24	29	30	21	5	3	—
	Pancreas	448	1	1	1	7	6	15	31	42	68	76	75	62	42	13	8
	Kidneys and suprarenal glands	185	20	5	3	13	5	10	13	11	25	25	18	17	13	3	4
	Bladder	266	3	—	—	3	3	4	13	20	19	52	52	41	31	21	4
	Brain	45	—	—	3	5	6	6	4	9	2	7	1	2	—	—	—
	Bones (jaw excepted) ..	328	6	15	26	21	13	16	26	35	38	29	40	28	18	12	5
	Other specified organs..	529	11	9	12	34	15	42	46	60	71	66	62	38	36	16	11
	Abdominal cavity, organ unspecified	262	—	3	1	1	4	8	18	28	29	26	45	36	39	16	8
	Other and undefined ..	251	1	1	6	7	12	13	21	26	38	38	28	27	19	12	2
	Total	2,686	42	35	56	104	78	143	219	284	343	373	365	288	214	99	43

The parts of the body affected by fatal cancer in 1922 are shown in Table XLI in greater detail than that provided by the international classification, six out of its seven headings (Nos. 43–49) relating to cancer being sub-divided according to a scheme approved by the Director of the Cancer Research Fund.

50. **Tumours not returned as malignant.**—As a result of the revision of the International List in 1920, this title now includes all non-malignant tumours except those of the brain and of the female genital organs. It also includes a rather larger number of growths of unstated nature, which cannot on the evidence given be classed either as benign or malignant. In order to secure a comprehensive presentation of all deaths attributed to tumours, all of these not returned as due to cancer are assembled in Table XLII, including mortality of this nature affecting the brain and female genital organs, but it is to be understood that, in accordance with international practice, the latter is excluded from the numbers shown under this head in Tables 4, 17 and 18.

Table XLII.—England and Wales, 1922 : Tumours not returned as Malignant.

Part affected.	All Ages.		0–		15–		35–		45–		55–		65–		75–	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Tumours classed with other disease of organ affected.																
84.2. **Cerebral tumour**	516	512	68	62	111	108	107	93	115	115	81	77	28	43	6	14
Cyst	10	10	2	2	5	2	1	2	2	3	—	1	—	—	—	—
Glioma	72	73	8	8	16	19	21	13	15	18	9	13	3	2	—	—
Fibroid	1	2	—	—	1	—	—	—	—	1	—	—	—	—	—	1
Other benign	4	6	1	—	—	2	1	2	2	—	—	2	—	—	—	—
Nature unstated	429	421	57	52	89	85	84	76	96	93	72	61	25	41	6	13
In 135. **Prostate**	102	—	—	—	—	—	—	—	3	—	21	—	35	—	43	—
'Adenoma'	99	—	—	—	—	—	—	—	3	—	21	—	32	—	43	—
Fibro-adenoma	3	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—
137. **Ovarian tumour**	—	284	—	1	—	31	—	41	—	49	—	51	—	51	—	60
Cyst	—	233	—	1	—	29	—	35	—	40	—	38	—	45	—	45
Cyst-adenoma	—	5	—	—	—	—	—	1	—	2	—	2	—	—	—	—
Other benign	—	11	—	—	—	—	—	2	—	4	—	3	—	1	—	1
Nature unstated	—	35	—	—	—	2	—	3	—	3	—	8	—	5	—	14
139. **Uterine tumour**	—	357	—	—	—	27	—	99	—	132	—	40	—	33	—	26
Fibroid	—	275	—	—	—	22	—	80	—	96	—	33	—	24	—	20
Fibro-myoma	—	40	—	—	—	1	—	12	—	16	—	3	—	6	—	2
Myoma	—	21	—	—	—	1	—	3	—	10	—	3	—	1	—	3
Polypus	—	13	—	—	—	3	—	2	—	6	—	1	—	1	—	—
Other benign	—	6	—	—	—	—	—	2	—	3	—	—	—	—	—	1
Nature unstated	—	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—
In 141.2 **Other female genital organs**	—	7	—	—	—	—	—	1	—	4	—	1	—	1	—	—
Broad ligament, Cyst	—	3	—	—	—	—	—	—	—	2	—	1	—	—	—	—
Fibroid	—	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—
Fibro-myoma	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Round ligament, Myoma	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
150. *Tumours not classed with other disease of organ or part of body affected.*																
Pituitary gland .. Non-malignant	1	3	—	—	—	—	1	1	—	1	—	—	—	1	—	—
Nature unstated	4	6	—	—	—	2	3	1	1	2	—	—	—	1	—	—
Thyroid .. .. Adenoma	1	18	—	—	1	4	—	—	—	5	—	2	—	4	—	3
Cyst-adenoma	2	4	—	—	—	1	—	1	1	2	1	—	—	—	—	—
Other benign	1	3	—	—	—	—	—	—	—	—	—	—	1	2	—	1
Nature unstated	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Adrenals .. Non-malignant	1	1	—	—	—	—	—	—	—	1	1	—	—	—	—	—
Nature unstated	1	1	—	—	1	—	—	1	—	—	—	—	—	—	—	—
Spinal cord .. Glioma	2	5	—	—	—	—	—	1	2	3	—	—	—	1	—	—
Other benign	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Nature unstated	9	4	—	—	—	—	1	—	5	1	1	—	2	3	—	—

Table XLII.—England and Wales, 1922: Tumours not returned as Malignant.—*continued.*

Part affected.	All Ages.		0–		15–		35–		45–		55–		65–		75–	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
50. *Tumours not classed with other disease of organ or part of body affected.*—contd.																
Nose .. .. Polypus	3	1	—	—	—	—	1	—	1	—	1	—	—	—	—	1
Nature unstated	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Larynx .. .. Papilloma ..	7	6	6	6	—	—	—	—	—	—	1	—	—	—	—	—
Other benign ..	3	—	—	—	—	—	—	—	1	—	1	—	—	—	1	—
Nature unstated	4	—	1	—	—	—	—	—	1	—	—	—	2	—	—	—
Mediastinum .. Non-malignant	2	1	—	—	—	1	—	—	—	—	1	—	—	—	1	—
Nature unstated	56	36	—	—	1	—	8	5	13	5	21	11	11	9	2	6
Lung .. .. Nature unstated	13	8	—	—	—	1	2	2	7	1	2	3	2	1	—	—
Œsophagus .. Non-malignant	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Nature unstated	8	1	—	—	—	—	—	—	—	—	—	—	6	—	2	1
Intestine .. .. Adenoma ..	3	—	—	—	1	—	—	—	—	—	—	—	1	—	1	—
Papilloma ..	1	4	—	—	1	2	—	—	—	1	—	—	—	—	—	1
Other benign ..	4	3	1	—	—	2	—	1	1	—	—	—	—	—	2	—
Nature unstated	13	25	—	—	—	—	1	—	1	1	3	3	5	7	3	14
Liver .. .. Non-malignant	—	3	—	—	—	—	—	1	—	—	—	—	—	2	—	—
Nature unstated	9	10	—	1	—	—	—	—	2	4	4	2	2	1	1	2
Pancreas .. .. Cyst	4	2	—	—	—	1	1	—	—	1	2	—	1	—	—	—
Nature unstated	3	4	—	—	—	—	—	—	—	—	—	—	2	3	1	1
Kidney .. .. Cyst	1	5	—	1	—	—	—	—	—	1	1	2	—	—	—	1
Papilloma or villous ..	1	2	—	—	—	—	—	1	—	—	—	—	—	1	1	—
Nature unstated	4	6	1	1	1	—	—	1	—	—	—	1	2	1	—	2
Bladder .. .. Papilloma or villous ..	96	22	—	—	2	—	7	2	11	3	30	5	19	5	27	7
Other benign ..	4	1	—	—	—	—	—	—	—	—	1	—	3	—	—	1
Nature unstated	9	3	—	—	—	—	—	—	1	—	2	—	5	2	1	1
Prostate .. .. Non-malignant	3	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—
Nature unstated	10	—	—	—	—	—	—	—	—	—	—	—	4	—	6	—
Breast .. .. Non-malignant	—	3	—	—	—	—	—	—	—	—	—	2	—	—	—	1
Nature unstated	—	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—
Jaw .. .. Non-malignant	2	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—
Nature unstated	1	2	—	—	—	—	—	—	—	1	—	—	1	—	—	1
Spine .. .. Exostosis ..	1	1	—	—	—	—	—	—	1	—	—	1	—	—	—	—
Nature unstated	4	5	—	—	1	—	1	—	—	1	—	3	1	1	1	—
Neck .. .. Non-malignant	2	2	1	—	—	—	—	—	—	—	—	2	1	—	—	—
Nature unstated	1	1	—	1	—	—	—	—	—	—	—	—	1	—	—	—
Thorax .. .. Nature unstated	10	1	—	—	—	—	—	—	4	1	3	—	3	—	—	—
Abdomen .. Cyst	—	3	—	—	—	—	—	—	—	—	—	—	—	1	—	2
Other benign ..	1	2	—	—	—	—	—	—	—	—	1	1	—	—	—	1
Nature unstated	20	48	1	—	—	1	1	—	1	6	2	6	6	20	9	15
Other sites .. Non-malignant	16	21	5	2	2	2	4	1	1	1	—	5	3	8	1	2
Nature unstated	15	13	2	—	2	1	—	—	2	2	3	5	5	4	1	1
Site not stated .. Non-malignant	2	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	1	2	—	—	—	—	—	—	—	1	—	—	1	—	—	1
Total (50) ..	361	296	20	12	15	18	31	20	57	47	82	54	92	79	64	66
Total, all tumours	979	1456	88	75	126	184	138	254	175	347	184	223	155	207	113	166
,, benign tumours	353	820	26	20	30	92	37	165	41	223	71	120	68	106	80	94
,, nature unstated	626	636	62	55	96	92	101	89	134	124	113	103	87	101	33	72

Another exclusion from cause 50 which requires mention is that of adenomata of the prostate, which it has been decided to continue to class to disease of that organ. These are shown by Table XLII to have been fatal only at ages 45 and upwards. From this and other circumstances it is believed that these deaths are essentially similar to those returned as due to hypertrophy of the organ. As the proportion of other deaths assigned to disease of the prostate occurring at ages over 55 is more than 98 per cent., and that from adenoma 97 per cent., there is not much room for doubt that in this case hypertrophy and adenoma are of the same nature, the term adenoma being applied to certain cases of localized glandular hypertrophy; but as the verbal form of return is suggestive of new growth it has been thought best to continue inclusion of these deaths in Table XLII. It may well be indeed that the other 13 deaths from tumour of the prostate included in cause 50, all of which occurred at ages 65 and upwards, are also of the same nature. Another reason for believing that adenoma is of the same nature as hypertrophy of the prostate is that the number of deaths so returned has suddenly increased to a great extent during the last two or three years. In 1911 it was 32, and in 1918, 45 only, so that the sudden increase to 115 in 1921 and 102 in 1922 cannot well represent anything other than a sudden change in mode of certification.

66. **Alcoholism.**—This heading in the International List of causes of death excludes organic disease attributed to alcoholism, so, in order to obtain as complete information as possible with regard to mortality from over indulgence in alcohol, all the deaths in certification of which any mention of alcohol appears are assembled in Table XLIII. These deaths make up a total of 621 as against 164 classed to heading 66 as directly due to alcohol. The causes most frequently associated in death certification with mention of alcoholism, with the number of deaths in the case of each, were :—Cirrhosis of the liver, 150; violence, 68; heart disease, 55; lobar pneumonia, 26; and neuritis, 25.

From alcoholism in both the wider and the narrower sense indicated above the abatement noted in the Review for 1921 of the much increased mortality of 1920 has been continued in 1922. Heading 66 in Table 5 shows how closely mortality from this cause (in the narrower sense) is associated with the price of beer and spirits, and the ability to pay it. From a yearly mortality of about 18 per million before the war, when the beer and spirit duties were comparatively low, the rate rapidly fell to 2 in 1918, after which it rose to 6 in 1920. The fall to 5 in 1921 and 4 in 1922 is presumably associated with lessened spending power in those years. This appears to have more than counteracted any effect in the opposite direction of such slight increase as occurred during this period in the hours of sale, though it has been held on other grounds that the hours of sale constitute the most important factor influencing alcoholic excess.

Table XLIII.—England and Wales, 1922 : Deaths from or connected with Alcoholism.

	All Ages.		Under 25.		25–		35–		45–		55–		65–		75–	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
66. Deaths attributed solely to alcoholism	117	47	—	1	4	5	43	9	39	12	20	11	8	6	3	3
Deaths attributed to other causes in conjunction with alcoholism:—																
11. Influenza	8	1	—	—	—	—	5	—	—	—	—	1	3	—	—	—
21. Erysipelas	1	1	—	—	—	—	—	—	1	1	—	—	—	—	—	—
31. Tuberculosis of the respiratory system	4	—	—	—	—	—	—	—	1	—	3	—	—	—	—	—
37. Disseminated tuberculosis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
38. Syphilis	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
43–49. Cancer	4	4	—	—	—	1	1	—	—	1	3	1	—	1	—	—
51. Rheumatic fever	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
52(3). Gout	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
57. Diabetes	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
69(1). Purpura	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Other general diseases	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
70. Encephalitis	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
72. Tabes dorsalis (locomotor ataxy)	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
74. Cerebral hæmorrhage, apoplexy, etc.	6	6	—	—	—	—	—	1	1	1	2	3	2	1	1	—
75(a). Hemiplegia	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
76. General paralysis of the insane	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—
78. Epilepsy	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
82. Hysteria and Neuritis	8	17	—	—	—	2	1	5	3	5	4	3	—	2	—	—
84(3). Disseminated sclerosis	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Other diseases of the nervous system	3	1	—	—	—	—	—	—	2	—	1	—	—	1	—	—
87. Pericarditis	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
88(3). Acute myocarditis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
90(2). Mitral valve disease	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
90(4). Other or unspecified valve disease	2	1	—	—	—	—	—	1	—	—	1	—	1	—	—	—
90(5). Fatty heart	6	5	—	—	1	—	—	1	3	4	2	—	—	—	—	—
90(6). Cardiac dilatation	6	1	—	—	—	—	1	—	3	—	1	—	—	1	1	—
90(7). Other or unspecified myocardial disease	19	3	—	—	—	—	1	1	8	—	4	2	5	—	1	—
90(9). Undefined heart disease	6	3	—	—	—	—	—	—	3	—	1	2	2	1	—	—
91(b). Arterio-sclerosis	1	2	—	—	—	—	—	—	—	1	1	—	—	1	—	—
91(c). Other diseases of the arteries	2	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—
99. Bronchitis	11	1	—	—	—	—	—	—	4	—	5	—	1	—	1	1
100. Broncho-pneumonia	7	5	—	—	—	—	1	3	2	1	4	1	—	—	—	—
101(a). Lobar pneumonia	21	5	—	—	3	—	4	4	8	1	3	—	3	—	—	—
102. Pleurisy	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
Other diseases of the respiratory system	3	3	—	—	—	—	1	1	1	—	—	1	1	1	—	—
108. Diseases of the buccal cavity and annexa	2	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—
111(a). Ulcer of the stomach	3	—	—	—	1	—	1	—	—	—	1	—	—	—	—	—
112(1). Inflammation of the stomach	8	5	—	—	1	1	—	1	4	2	—	1	3	—	—	—
112(2). Other diseases of the stomach	2	1	—	—	—	—	1	—	1	—	—	1	—	—	—	—
122(a). Cirrhosis of the liver	103	47	—	—	1	1	12	10	34	12	41	17	14	6	1	1
129. Chronic nephritis	10	2	—	—	—	—	4	1	2	—	3	—	1	—	—	1
133. Diseases of the bladder	3	—	—	—	—	—	—	—	1	—	1	—	1	—	—	—
138(1). Salpingitis	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
153(1). Phlegmon	2	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—
154. Other diseases of the skin and its annexa	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
165–174. Suicide	11	4	1	—	2	—	1	2	5	2	1	—	1	—	—	—
182. Accidental drowning	4	—	2	—	2	—	—	—	—	—	—	—	—	—	—	—
185. Injury by fall	18	7	1	—	2	—	4	3	5	3	5	—	1	1	—	—
188. Injury by crushing (vehicles, railways, etc.)	4	1	1	—	—	—	1	—	1	—	—	1	1	—	—	—
Other violence	15	4	3	—	2	—	—	—	2	2	5	1	1	—	2	1
Total	438	183	8	1	20	10	84	45	144	49	117	48	54	23	11	7

74. **Cerebral Hæmorrhage.**—This is one of the most important, numerically, of all the causes of death, the number of deaths allocated to it in 1922 being 26,947, corresponding to a death-rate of 706 per million persons living. This rate was exceeded only by those for heart diseases 1,568, cancer 1,229, tuberculosis 1,121, bronchitis 1,073 and pneumonia (all forms) 1,073. But the International List title No. 74 does not include all deaths returned as of this nature. To obtain a comprehensive total we must add the deaths from No. 75, paralysis of unstated origin, 62 per million (the essentially similar nature of which may be inferred from the fact that 88 per cent. of them are returned as hemiplegia), and No. 91 (*b*) (1), arterio-sclerosis with record of cerebral vascular lesion. These latter deaths are of similar nature to those listed to cerebral hæmorrhage, but mention having been made on the certificate of arterio-sclerosis, a malady which may be assumed in the bulk of such cases to have been a primary cause of the cerebral vascular lesion, generally of course hæmorrhage, the general rules of tabulation forbid assignment of the deaths to the secondary cause. By distinguishing such deaths from others assigned to arterio-sclerosis we are enabled to state the full total of deaths from cerebral hæmorrhage (including "apoplexy," cerebral embolism, and cerebral thrombosis) as 34,039, with a death-rate of 892 per million.

The validity of the assumption that practically the whole of these 34,039 deaths are of essentially similar nature may to some extent be tested by comparing the sexes and ages of the persons whose deaths are allocated to the various headings combined in the total group. This is done in Table XLIV, which shows that the deaths returned from each of these six causes are of very similar sex and age distribution. The proportions stated for males and females of each age distinguished are per 10,000 total deaths allocated to the same cause. It will be seen that beyond some excess from embolism and deficiency from arterio-sclerosis with cerebral hæmorrhage at the earlier ages, together with a relatively high proportion for males of the latter form of return, the sex and age distribution applying to the whole group of cerebral vascular lesions is little departed from by any of its constituent members. The relative excess for old men of certificates mentioning arterio-sclerosis as well as cerebral hæmorrhage, etc., is seen to be a feature applying in much greater degree to deaths attributed to arterio-sclerosis without record of cerebral vascular lesion. This seems to indicate, if the returns are taken at their face value, that cerebral hæmorrhage forms a larger portion of the total risk of arterio-sclerosis for women than for men, since many more of the males than of the females who succumb to the total risk escape its cerebral form. The possibility, however, must be borne in mind that arterio-sclerosis may for some reason be more readily returned as a cause of death for males than for females. If this were so it would equally explain the facts noted, for it may be assumed that fatal cerebral

hæmorrhage seldom passes unrecorded, while the degree of arterio-sclerosis to which death is attributed must vary greatly in different cases. The main purpose of the table, however, is fulfilled by its demonstration that the sex and age distribution of the mortality from all the forms of cerebral vascular lesion distinguished is essentially similar.

Table XLIV. England and Wales, 1922. Sex and Age Distribution of Mortality from Cerebral Vascular Disease.

Ages at Death.	74, 75, 91(*b*) (1). Cerebral Disease of Vascular Origin.		74 Cerebral hæmorrhage, Apoplexy, etc.		74 (*a*) (1). Cerebral hæmorrhage so returned.		74 (*a*) (2). Apoplexy, lesion unstated.		74 (*b*) (1). Cerebral embolism.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females
0—	90	88	98	92	95	83	72	78	181	314
40—	194	245	200	263	211	269	193	230	242	507
50—	620	718	605	767	628	811	585	681	568	700
60—	1,370	1,399	1,310	1,447	1,340	1,459	1,279	1,534	1,087	1,522
70—	1,667	1,976	1,602	2,002	1,599	1,981	1,714	1,979	1,424	1,957
80—	612	1,021	595	1,019	564	960	619	1,036	628	870
	4,553	5,447	4,410	5,590	4,437	5,563	4,462	5,538	4,130	5,870

Ages at Death.	74 (*b*) (2). Cerebral thrombosis.		75 Paralysis of unstated origin.		91 (*b*) (1). Arterio-sclerosis with record of cerebral vascular lesion.		91 (*b*) (2). Arterio-sclerosis without record of cerebral vascular lesion.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0—	134	113	131	199	23	8	27	6
40—	101	172	140	207	186	159	96	38
50—	449	524	567	512	734	541	487	141
60—	1,170	1,204	1,384	1,236	1,708	1,205	1,548	615
70—	1,539	2,220	1,779	2,152	1,975	1,749	2,440	1,652
80—	814	1,560	580	1,113	727	985	1,345	1,605
	4,207	5,793	4,581	5,419	5,353	4,647	5,943	4,057

84 (3). **Disseminated Sclerosis.**—At the time of writing three years records are available for this form of mortality, which was first distinguished in the Review for 1921. These show that the mortality so ascribed is so far very constant, and similar for both sexes, varying only from 16 to 20 per million males and from 17 to 18 per million females. Age at death also varies little, the maximum number for each sex having each year occurred at one or other of the three quinquennia of age 50–65.

84 (4). **Paralysis Agitans.**—This cause of death, also first distinguished in these returns in 1921, displays even greater constancy of age distribution, the maximum number of deaths having occurred in each of the three years compared at 70–75 in each sex. The mortality also is so far very constant, and almost exactly the same as that from disseminated sclerosis, varying from 19 to 21 per million males, and from 16 to 20 per million females.

87–90. **Heart Diseases.**—The number of deaths attributed to this cause—59,837, 27,565 of males and 32,272 of females—was as usual larger than for any other item in the list of causes. The mortality of 1,568 per million persons living was the highest recorded since the war; and as the exceptional height of the civilian rates for the years 1915–17 (Table 5) is evidently in the main attributable to deterioration of the civilian male population by selection of the healthy in recruiting, leaving those suffering from heart disease to swell the civilian death-rate from this cause to an artificial level, the mortality for 1922 is really the highest significant rate of all those for the eleven years, 1912–22, covered by Table 5.

This statement is confirmed by the fact that for females, whose rates were not affected by recruiting during the war, the mortality of 1922 is the highest of the eleven years covered by the table except 1915, when it was practically the same.

While comparison of the mortality from heart disease in the precise significance attaching to the term under the International List of Causes of Death can be carried back only to 1911, when use was first made in these reports of that classification, the difference effected in this heading by the change of classification in 1911 was both slight and measurable, so that the comparison can be extended to years prior to that date with adequate exactitude. For the years 1911–20 tabulation was carried out under both the old and the new classifications, the deaths from heart disease during the decade being 549,461 under the old, and 540,877 under the new classification. The net effect of the changes in classification introduced in 1911, therefore, was to decrease the mortality allocated to heart disease in this ratio, and so the rate recorded for each of the years 1901–10, during which the classification discarded in 1911 was in use, may be made comparable with those for later dates by multiplication by the factor ·9844. When this is done the death rate of 1,568 in 1922 proves to be the highest of the century except for the inflated rates of the three war years 1915–17, which must be excluded from the camparison. Apart from them, and from that for 1918, 1,542 per million, which is affected by the same considerations and by the great influenza epidemic as well, mortality from 1901 to 1921, corrected as above described to secure comparability, has varied from a minimum of 1,326 in 1911 to a maximum of 1,493 in 1919, while for 1923 the rate was 1,480. So far, then, as the records can be compared, the mortality of 1922 is much the highest of the century.

Completion of the tabulation of the ages of the population returned in the census of 1921 renders it possible to make a first presentation for 1922 of the results of the greater differentiation of the forms of heart disease introduced into our classification in 1921. This is embodied in Table XLV, which compares the mortalities of the chief forms of heart disease now distinguished at different ages in each sex.

Table XLV.—England and Wales, 1922 : Mortality per million living from various forms of Heart Disease.

Ages at Death.	87–90 Heart Diseases.		87 Pericarditis.		88 (1). Infective endo-carditis.		89 Angina pectoris.		90 (1). Aortic valve disease.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0—	20	24	10	13	5	—	—	—	—	—
1—	36	44	10	5	1	1	—	—	—	—
5—	95	129	9	12	6	12	—	—	3	1
10—	140	201	8	11	11	20	—	1	5	4
15—	209	233	6	6	24	30	—	—	6	3
20—	254	223	3	1	41	35	—	1	15	4
25—	381	277	7	—	78	35	1	2	27	9
30—	421	381	10	5	74	33	1	3	40	10
35—	594	561	6	5	72	33	6	3	68	15
40—	818	716	14	4	57	27	24	9	95	26
45—	1,165	1,070	13	9	45	27	50	10	136	37
50—	1,858	1,811	16	9	24	27	105	22	227	61
55—	3,143	2,790	22	13	31	24	174	42	311	81
60—	5,551	5,068	34	13	29	32	294	115	461	164
65—	9,232	8,193	26	31	31	30	414	163	634	264
70—	14,182	13,202	34	13	34	26	502	232	795	376
75—	20,978	19,100	62	38	37	38	543	269	1,087	475
80—	28,675	28,195	21	49	11	12	430	238	1,192	689
All Ages—										
Crude	1,512	1,619	12	8	36	26	54	23	113	46
Standardized	1,301	1,218	11	8	35	25	44	17	95	35

Ages at Death.	90 (2). Mitral valve disease.		90 (4). Other or unspecified valve disease.		90 (5). Fatty heart.		90 (7). Other or unspecified myocardial disease.		90 (9). Heart disease (undefined).	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0—	—	—	—	—	—	—	—	3	5	—
1—	6	8	7	10	—	—	—	1	7	8
5—	22	29	23	31	—	—	1	1	15	21
10—	45	49	33	53	—	1	1	2	18	27
15—	57	70	59	60	1	1	2	—	32	36
20—	58	62	63	58	1	4	4	2	37	31
25—	55	83	94	80	4	4	7	6	48	31
30—	80	119	99	96	5	9	9	13	55	55
35—	98	154	137	161	12	25	29	27	84	80
40—	115	197	204	181	34	34	40	41	125	121
45—	148	264	266	320	60	73	153	100	211	181
50—	214	418	412	481	137	117	264	218	349	357
55—	389	533	713	723	206	215	553	429	582	605
60—	643	916	1,174	1,262	336	356	1,083	917	1,229	1,076
65—	1,123	1,330	2,053	1,974	445	453	2,068	1,796	2,077	1,826
70—	1,570	2,155	2,641	2,846	689	575	3,750	3,204	3,580	3,202
75—	2,505	2,760	4,073	3,898	731	706	6,128	5,717	4,979	4,385
80—	3,136	3,591	4,360	4,523	848	860	11,030	11,199	6,519	5,730
All Ages—										
Crude ..	193	295	316	371	69	77	314	347	318	338
Standardized	169	229	271	283	57	57	269	245	271	250

For heart disease as a whole it will be seen that the very slight mortality at ages under 20 falls chiefly upon females, but that at all subsequent ages the rate is higher for males. Notwithstanding the fact that males suffer most at all ages when this disease is of importance, the deaths of females exceeded those of males by 17 per cent. and their crude death-rate at all ages was 1,619 as against only 1,512 for males. This is due to the concentration of heart disease mortality upon the later portion of life, during which the number of female lives at risk is greatly in excess, so that their lower death-rates produce more deaths.

The general effect of the comparison of mortality of males and females of various ages is summed up by the standardized rates, of which that for males, 1,301, is accordingly in excess of that for females, 1,218.

Steady increase of the rates from youth to age is an outstanding characteristic of the table which applies to each of its more important causal sub-divisions, but particularly to myocardial disease other than fatty—No. 90 (7)—mortality from which is in great excess, relatively to that from heart disease in general, at all ages from 65 upwards, and at no others.

Comparisons of this nature may conveniently be made by the aid of Table XLVI, in which the entries represent the percentage proportion borne by the mortality of each sex and age group, to the standardized rate at all ages for the same sex and cause. As the standardized rate sums up the general effect of the different age group rates, the proportion borne to it by any age group rate shows the degree in which the latter is relatively high or low as compared with mortality at all ages. Thus we see that for heart disease in general the mortality of each sex is relatively low, *i.e.* below the general rate applying to all ages, at all periods of life up to 50, and relatively high at all higher ages, the excess increasing with great rapidity as life advances.

If the entries in Table XVLI for heart disease in general are plotted in the form of a graph it will be found that they form a very regular curve, almost exactly alike for both sexes, showing very gradual increase of the remarkably low relative rates applying to all ages up to about 45, after which rapid increase gradually sets in, and continues at an ever-accelerating pace throughout the rest of life to extreme old age.

For the different forms of heart disease distinguished some indication is given of the peculiarities of their age distribution as compared with that of heart disease in general by printing in bold type the entries in Table XLVI which are in excess of the corresponding entries for heart disease generally. Thus we see that as compared with other forms of heart disease, pericarditis is particularly fatal to young persons, all entries for males, and nearly all for females, being in excess at ages under 55, after which no instance of excess occurs. The distribution of mortality from infective endocarditis is almost exactly the same, all entries for it being in excess at every age under 50 and in defect at every age over 50 in both sexes. The only other forms of heart disease distinguished which are fatal especially in early life (as compared with heart disease in general) are mitral valve disease and "valvular disease."—not returned as mitral or aortic. In the case of mitral disease, mortality from which is seen from Table XLV to be considerably higher for females than for males, this excess applies to all ages under 60 in the case of females, but only to those under 45 in that of males. Mortality from disease of the aortic valve, on the other hand, is in great excess for males at every age (Table XLV), but its period of

relative excess occurs definitely later in life than that of mitral disease, lasting, as it does, from about 30–65. Deaths from fatty heart occur rather earlier in life than those from other forms of myocardial disease, the period of relative excess lasting from 45–75 for males and from 40–70 for females. For undefined "heart disease," both sex and age distribution differ comparatively little from those for heart disease as a whole, but the tendency to leave the form of disease undefined increases somewhat with advancing age, relative excess in Table XLVI, which is in no case large, applying to nearly all ages from 55–60 onwards for both sexes.

Table XLVI.—England and Wales, 1922: Mortality from various forms of Heart Disease. Age rates per cent. of Standardized Rates at all ages.

Ages at Death.	87–90. Heart Disease (all forms).		87. Pericarditis.		88 (1). Infective Endocarditis.		89. Angina Pectoris.		90 (1). Aortic Valve Disease.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0– ..	2	2	**91**	**163**	**14**	—	—	—	—	—
1– ..	3	4	**91**	**63**	**3**	**4**	—	—	—	—
5– ..	7	11	**82**	**150**	**17**	**48**	—	—	3	3
10– ..	11	17	**73**	**138**	**31**	**80**	—	6	5	11
15– ..	16	19	**55**	**75**	**69**	**120**	—	—	6	9
20– ..	20	18	**27**	13	**117**	**140**	—	6	16	11
25– ..	29	23	**64**	—	**223**	**140**	2	12	28	**26**
30– ..	32	31	**91**	**63**	**211**	**132**	2	18	**42**	29
35– ..	46	46	**55**	**63**	**206**	**132**	14	18	**72**	43
40– ..	63	59	**127**	50	**163**	**108**	55	53	**100**	**74**
45– ..	90	88	**118**	**113**	**129**	**108**	**114**	59	**143**	**106**
50– ..	143	149	**145**	113	69	108	**239**	129	**239**	**174**
55– ..	242	229	200	163	89	96	**395**	**247**	**327**	**231**
60– ..	427	416	309	163	83	128	**668**	**676**	**485**	**469**
65– ..	710	673	236	388	89	120	**941**	**959**	667	**754**
70– ..	1,090	1,084	309	163	97	104	**1,141**	**1,365**	837	1,074
75– ..	1,612	1,568	564	475	106	152	1,234	**1,582**	1,144	1,357
80 and up	2,204	2,315	191	613	31	48	977	1,400	1,255	1,969

Ages at Death.	90 (2). Mitral Valve Disease.		90 (4). Other or Unspecified Valve Disease.		90 (5). Fatty Heart.		90 (7). Other or Unspecified Myocardial Disease.		90 (9). Heart Disease (Undefined).	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0– ..	—	—	—	—	—	—	—	1	**2**	—
1– ..	**4**	3	**3**	4	—	—	—	0	3	3
5– ..	**13**	**13**	**8**	**11**	—	—	0	0	6	8
10– ..	**27**	**21**	**12**	**19**	—	2	0	1	7	11
15– ..	**34**	**31**	**22**	**21**	2	2	1	—	12	14
20– ..	**34**	**27**	**23**	**20**	2	7	1	1	14	12
25– ..	**33**	**36**	**35**	**28**	7	7	3	2	18	12
30– ..	**47**	**52**	**37**	**34**	9	16	3	5	20	22
35– ..	**58**	**67**	**51**	**57**	21	44	11	11	31	32
40– ..	**68**	**86**	**75**	**64**	60	**60**	15	17	46	48
45– ..	88	**115**	**98**	**113**	**105**	**128**	57	41	78	72
50– ..	127	**183**	**152**	**170**	**240**	**205**	98	89	129	143
55– ..	230	**233**	**263**	**255**	**361**	**377**	206	175	215	**242**
60– ..	380	400	**433**	**446**	**589**	**625**	403	374	**454**	**430**
65– ..	664	581	**758**	**698**	**781**	**795**	**769**	**733**	**766**	**730**
70– ..	929	941	975	1,006	**1,209**	1,009	**1,394**	**1,308**	**1,321**	**1,281**
75– ..	1,482	1,205	1,503	1,377	1,282	1,239	**2,278**	**2,333**	**1,837**	**1,754**
80 and up	1,856	1,568	1,609	1,598	1,488	1,509	**4,100**	**4,571**	**2,406**	2,292

(Entries in excess of those for heart disease (all forms) printed in bold type).

Broadly speaking, it may probably be said that the results embodied in Tables XLV and XLVI, to which reference may be made for further details, reveal little that has not long been familiar to clinicians. The justification for their presentation is not that they include anything new or unexpected, but that they enable us for the first time to attach numerical values to differences in sex and age distribution long recognised to exist, and to examine the extent to which the experience and opinion of the profession generally harmonize with those of its leaders, as expressed in text-books of clinical medicine. Greater correspondence than that which has proved to exist could scarcely have been anticipated, so on the whole the result of this new test of the accuracy of death certification must be considered reassuring.

In the Review for 1921 the proportions of deaths of males and females attributed to the various forms of heart disease distinguished in Table 17 were stated; and in Table XLVII this statement is made for 1922, the figures for 1921 being added for comparison, as well as to give some idea of the stability of the distribution in successive years.

Table XLVII.—England and Wales, 1921 and 1922. Proportions of total Deaths from Heart Diseases allocated to each form distinguished.

		Males.		Females.	
		1921.	1922.	1921.	1922.
87	Pericarditis	777	780	546	514
88 (1)	Infective endocarditis	2,901	2,362	1,666	1,577
88 (2)	Other acute endocarditis	1,258	914	1,200	961
88 (3)	Acute myocarditis	457	464	414	434
89	Angina pectoris	2,977	3,577	1,193	1,425
90 (1)	Aortic valve disease	7,682	7,488	2,956	2,851
90 (2)	Mitral valve disease	12,899	12,748	18,683	18,217
90 (3)	Aortic and mitral valve disease	1,959	1,741	1,266	1,181
90 (4)	Other or unspecified valve disease	22,764	20,903	23,447	22,930
90 (5)	Fatty heart	4,376	4,538	4,608	4,775
90 (6)	Cardiac dilatation	1,951	1,763	1,826	1,760
90 (7)	Other or unspecified myocardial disease	17,495	20,744	18,286	21,440
90 (8)	Disordered action of the heart	910	983	1,012	1,069
90 (9)	Heart disease (undefined)	21,594	20,995	22,897	20,866
87–90	Heart diseases	100,000	100,000	100,000	100,000

In both years pericarditis, infective endocarditis, angina pectoris, and aortic valve disease have been much commoner, relatively to other forms of heart disease, in males, and mitral valve disease in females. The proportion of deaths attributed to angina pectoris has increased in 1922 for both sexes, but especially for males, its crude death-rate having risen from 41 to 54 per million for males, and from 17 to 23 for females (Table 5).

This movement has continued in 1923, when the rates were 58 for males and 25 for females—the highest noted since 1875, when the record for this cause commences. In that year the mortality attributed to angina pectoris was 22 per million males and 13 per million females. The rise since then has on the whole been steady, but Table 5 shows that the rapid increase since 1920 had a counterpart in 1913–15, the rates for the latter year, 52 for males and 21 for females, being higher in each case than those for any subsequent year up to 1922.

The share in heart disease mortality borne by infective endocarditis, on the other hand, has decreased in 1922, notably for males and slightly for females, with corresponding decrease of the death-rate of males in Table 5 from the exceptionally high level attained in 1921.

This decrease continued in 1923, when the rate was 30 per million males and 24 per million females, as against 40 and 24 in 1921, earlier figures being much lower. In last year's Review it was pointed out that the increase was largely confined to the ages of military service, which were roughly taken as 20–45, though those representative of war veterans are obviously increasing. At these ages the deaths had then increased from 142 in 1913 to 543, those at all other ages having increased only from 142 to 181, thus suggesting infection during military service as a possible cause of the sudden increase.

In 1922 the number of deaths at the same ages was 423, and in 1923, 326, those at other ages having increased to 228 in 1922, and 227 in 1923. It thus appears that the later fall, as well as the earlier rise, in mortality has been very largely confined to men of the ages chiefly affected by military service.

The proportion of deaths classified to acute endocarditis not characterised as "infective" or "malignant" has followed much the same course as that from the graver type of disease, falling largely in 1922 for both sexes, but especially for males, with corresponding falls of mortality in Table 5. In so far as these deaths are due to disease of the same nature as, but milder type than, those attributed to malignant endocarditis, it is to be expected that the movement of both mortalities should be more or less parallel, but such parallelism is not very conspicuous in Table 5.

The proportions shown in Table XLVII for the various forms of valvular disease are very much the same in both years for both males and females, specification of the valve affected being more complete for males in each year.

To chronic myocardial disease other than fatty a considerably increased proportion of deaths was attributed in 1922, and Table 5 shows that this mortality, first distinguished in 1921, increased from 254 in that year to 331 in 1922 (350 in 1923).

It seems likely that this movement may be largely accounted for by increasing definiteness of certification, myocarditis being in many cases substituted for the vague "heart disease" of an earlier period. This latter form of return, however, still covers over 20 per cent. of the total deaths (Table XLVII).

91 (b). **Arterio-sclerosis.**—To this cause, first distinguished in our tabulation in 1911, there were allocated in 1922 the deaths of 8,340 males and of 6,163 females, the corresponding mortalities being 458 and 309 per million. It is, accordingly, now one of the chief causes of death as tested by numbers assigned to it.

Tables 4 and 5 cover the whole of the recorded history of this form of mortality, except for 1911, when 2,389 deaths of males and 1,509 of females yielded death-rates of 136 per million for males, 81 for females, and 108 for persons. Since that date each year without exception has recorded an increase both in the number of deaths so returned and in the resultant mortality. This has been due to a constantly increasing tendency to ascribe to this form of disease deaths which would formerly have been assigned to other causes. In order to prevent this transfer from obscuring the records of one of the more important competing causes—cerebral hæmorrhage—it has been necessary to open a separate heading, already referred to, for arterio-sclerosis with record of cerebral vascular lesion, and further subdivisions of this description may be called for in the future. So many forms of local disease, as of the kidneys, brain, heart, etc., may be regarded as manifestations of arterio-sclerosis that the tendency to transfer must be expected to continue, and, in the absence of the special step taken in the case of cerebral hæmorrhage, to give to the mortalities recorded for such local diseases an increasingly favourable appearance, apart from any real changes affecting them.

The extent to which this process of transfer has gone during the years 1911–23 may be inferred from the following statement of deaths from arterio-sclerosis per cent. of total deaths in each of these years :—

1911	0·74	1915	1·48	1918	1·47	1921	2·72
1912	1·11	1916	1·65	1919	2·05	1922	2·98
1913	1·34	1917	1·79	1920	2·32	1923	3·38
1914	1·50						

The pace of transfer is evidently accelerating rather than slackening, so a material factor making for incomparability is gradually being introduced into the records of many important causes of death.

These deaths are not only in considerable excess for males, but are recorded at an earlier period of life for that sex, the proportion per 10,000 at all ages being shown by the following

statement or proportionate mortality at various ages, derived from Table 17, to be higher for males than for females at each age group except 45–50, 75–80 and 80 and upwards, in the last of which it is very much higher for females. In so far as " a man is as old as his arteries," this is merely a restatement of the fact that the female is the better wearing sex, the difference in this case being presumably attributable to endowment with a superior grade of " vital rubber," to which may be added in some measure larger exposure of males to the causes provocative of arterial disease, such as strain, lead, syphilis, and perhaps over indulgence in food and in alcohol.

England and Wales, 1922: Deaths from Arterio-Sclerosis per 10,000 at all ages.

	Males.	*Females.*	*Persons.*
0–	6	3	5
30–	14	3	10
35–	24	10	18
40–	83	34	62
45–	135	148	141
50–	345	222	293
55–	641	417	546
60–	1,096	729	940
65–	1,687	1,172	1,468
70–	2,054	1,738	1,919
75–	1,927	2,223	2,053
80 and up ..	1,988	3,301	2,545
All Ages ..	10,000	10,000	10,000

For both sexes increase with increasing age in the proportion of deaths ascribed to this cause is a rule with very few exceptions.

99. **Bronchitis.**—The 40,912 deaths allocated to this cause, 10,754 to its acute and 12,200 to its chronic forms, this distinction not being drawn for the remaining 17,958, correspond to a death-rate of 1,073 per million persons living—1,101 for males and 1,045 for females. The only causes of death recording higher mortality are heart disease 1,568, cancer 1,229, and tuberculosis 1,121. The rate for pneumonia (all forms) was also 1,073, 1921 and 1918 being the only other exceptions in Table 5 to the general rule of higher mortality from bronchitis than from pneumonia. This rule applies, however, only to females, who in Table 5 show a higher death-rate from pneumonia than bronchitis only in 1918, the year of influenzal pneumonia. For males excess has been

on the side of pneumonia in each of the eleven years covered by the table except 1916 and 1919. The death-rate for persons, 1,073, is 21 per cent. higher than in 1921, which recorded the exceptionally low rate of 889.

Table 18, with the corresponding table for 1923, shows that the monthly deaths varied from 7,867 in January and 6,237 in February, when influenza mortality was at its height, to 1,361 in August and 1,360 in September, seasonal distribution thus corresponding closely with temperature. Table 31 suggests that temperature may go far in accounting not only for the seasonal but for the annual variation in bronchitis mortality, for it shows that in 1921, when the mortality was at its lowest, the mean temperature of the air was higher than in any other of the 50 years 1873–1922, and that the 21 per cent. increase of mortality in 1922 corresponded with a fall in mean air temperature to rather below the 50-year average. In 1923, however, bronchitis mortality, at 852, was even lower than in 1921, although the mean air temperature of 50·3° F. at Greenwich, though higher than in 1922 (49·4), was much below that of 1921 (52·7).

100, 101. **Pneumonia.**—The 40,930 deaths attributed to this disease correspond to a death-rate of 1,073 per million, this figure being, as already noted, only exceeded by those for heart disease, cancer, and tuberculosis. As in the case of bronchitis the death-rates of 1,280 for males and 883 for females show considerable increase over the exceptionally low figures of the previous year. In fact, Table 5, and similar tables in earlier reports, show that the annual changes in mortality from both diseases generally occur in the same direction. And, as for bronchitis, the low record—so far at least as recent years are concerned—of 1921 has been considerably bettered in 1923. The proportions of deaths ascribed to broncho-, lobar, and undefined pneumonia were 55·2, 22·4 and 22·4 per cent. respectively, that for broncho-pneumonia being exceptionally high. The largest monthly numbers of deaths were 7,260 in January and 5,397 in February, when influenzal mortality was at its height (Table 18), and the smallest 1,573 in August and 1,519 in September, the seasonal distribution thus being exactly the same as for bronchitis, and showing the same dependence upon temperature.

118. **Hernia, Intestinal Obstruction.**—The mortality from each of these causes, which increased remarkably during the war, has from 1919 onwards remained at a normal level The combined mortality is seen in Table 5 to have risen gradually from 109 per million persons living in 1914 to 147 in 1918, and to have fallen to 112 in 1919, since when it has scarcely varied, the rate for each year 1920–23 being 111. The table shows, further, that for each sex the war increase of mortality from hernia was greater than that from intestinal obstruction, and that for each

of these causes it was greater for males than for females. Deterioration, under war conditions of understaffing and overcrowding, of the surgical hospital service available for the civilian population, to which alone the death-rates for 1918 refer, might account for the increase in mortality common to both sexes, while the excess of increase for males and for hernia might have to do with increase in the number of operations for this condition as a result of medical examination for military service. It is only possible here, however, to point out the facts, leaving their explanation to investigators having access to the army and other hospital records involved. (In 1920, the latest year for which these facts have been published, 66 per cent. of all deaths from hernia and 57 per cent. of those from intestinal obstruction occurred in institutions for the sick or insane.)

128, 129. **Acute and Chronic Nephritis.**—The decline in mortality from these forms of disease, to which attention was called in the Review for 1921, has continued for the acute form in both 1922 and 1923, while for chronic nephritis the great bulk of the decline noted in 1921 has been maintained. After large and steady increase during 1861–1910, the mortality from both forms of this disease reached a maximum in 1915, from which that for acute nephritis shows a decline of 38 per cent. in 1922, and that for chronic nephritis of 24 per cent. The latter decrease may be in part associated with the increase of 62 per cent. in mortality attributed to arterio-sclerosis during the same seven years, for in many cases of associated arterial and kidney disease it must be difficult to decide which to return as primarily responsible for death, and it may well be that at present there is an increasing tendency to regard the arterial condition as primary. Chronic nephritis, like, but in less degree than, arterio-sclerosis, is chiefly fatal to elderly persons, but acute nephritis is chiefly fatal to the young, rather more than half the deaths in 1922 occurring at ages under 40. Mortality from scarlet fever has also declined largely since 1915, but the movements of the two do not harmonize to such an extent as to suggest that most deaths from acute nephritis are due to recent scarlet fever.

143–150. **The Puerperal State.**—The number of deaths assigned to pregnancy or childbirth was 2,971 (Tables 4, 17 and L) corresponding to a rate of 3·81 per 1,000 births. Inclusion of the 1,051 deaths in Table LII raises the proportion to 5·16 deaths stated to have been caused by or associated with pregnancy and childbirth for every 1,000 births.

For comparison of the deaths definitely assigned to pregnancy and childbirth with those so classed for years prior to 1911 deduction is required of 180 deaths from puerperal nephritis and albuminuria (Table L), which before that date were not distinguished as puerperal. The resultant rate of 3·58 deaths per

1,000 live births is compared in Table XLVIII with similar rates for the preceding thirty-one years. The comparison can be extended back to 1876, but the records suggest that the figures from about 1890 onwards are more inclusive than those relating to earlier dates. It will be seen that the decline in 1921 from the high rates of the two preceding years has been fully maintained, in 1922, the puerperal mortality of the year, both from sepsis and other causes, being below the average for any of the six preceding quinquennia.

Table XLVIII.—Mortality of Women in Childbirth per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1891–1922. (Classification as in use before 1911.)

Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.		
	Sepsis.	Other Causes.	Total Child-birth.		Sepsis.	Other Causes.	Total Child-birth.		Sepsis.	Other Causes.	Total Child-birth.
1891–95	2·60	2·89	5·49	1911	1·52	2·15	3·67	1917	1·39	2·27	3·66
1896–1900	2·12	2·57	4·69	1912	1·47	2·31	3·78	1918	1·35	2·20	3·55
1901–05	1·95	2·32	4·27	1913	1·34	2·37	3·71	1919	1·76	2·36	4·12
1906–10	1·56	2·18	3·74	1914	1·63	2·32	3·95	1920	1·87	2·25	4·12
1911–15	1·50	2·31	3·81	1915	1·56	2·38	3·94	1921	1·46	2·25	3·71
1916–20	1·59	2·29	3·88	1916	1·47	2·40	3·87	1922	1·46	2·12	3·58
1910	1·42	2·14	3·56								

The mortality in 1922 of 2·12 deaths per 1,000 births from non-septic causes is the lowest for any period dealt with in the table, but although the sudden increase of sepsis mortality in 1919 and 1920 has for the most part disappeared, the sepsis rate is still above those for 1917 and 1918 as well as for 1913.

The distribution throughout the country of the mortality ascribed to childbirth is outlined in Table XLIX.

As regards the distinction between town and country, decline, with increasing urbanization, of mortality from causes other than sepsis is a rule applying, without exception, to each section of the country distinguished. There is less difference as regards sepsis, but in its case the tendency is reversed, the highest rate for each section of the country except the Midlands being that of its county boroughs.

There is more difference between the parts of the country compared than between the classes of area. Wales returns much the highest rate in consequence of death-rates from non-septic causes in excess of any of the corresponding English rates and of rates from sepsis which are also the highest in the table except in the case of the smaller towns. Then comes the North, with rates from both septic and non-septic causes almost uniformly in excess of average, and then, at a long interval, the South and Midlands.

Table XLIX.—Distribution throughout England and Wales of Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1922.

		North.	Mid-lands.	South.	Wales.	England and Wales.
London	Sepsis ..	—	—	1·36	—	1·36
	Other causes	—	—	1·48	—	1·48
	All causes	—	—	2·84	—	2·84
County Boroughs ..	Sepsis ..	1·72	1·19	1·75	3·32	1·62
	Other causes	2·38	1·98	2·13	3·24	2·28
	All causes	4·10	3·17	3·88	6·56	3·90
Other Urban Districts	Sepsis ..	1·40	1·23	1·04	1·31	1·27
	Other causes	3·00	2·15	2·48	3·77	2·68
	All causes	4·40	3·38	3·52	5·08	3·95
Rural Districts ..	Sepsis ..	1·14	1·16	1·06	1·45	1·16
	Other causes	3·07	2·51	2·75	3·83	2·85
	All causes	4·21	3·67	3·81	5·28	4·01
All Areas	Sepsis ..	1·54	1·20	1·28	1·75	1·38
	Other causes	2·67	2·19	2·02	3·68	2·43
	All causes	4·21	3·39	3·30	5·43	3·81

The non-septic rate is much the lowest in London, as in each of the three preceding years ; and in fact, the general distribution is very similar to that in 1919–21, the only years for which the table has been prepared.

In 1919–21, however, mortality from sepsis was much more evenly distributed than that from other causes, but in 1922 this is not the case. The former ranges from 1·04 in the southern urban districts to 3·32 in the county boroughs of Wales ; while the latter varies between a minimum of 1·48 in London and a maximum in the Welsh rural districts, of 3·83.

Table L.—England and Wales, 1922 : Deaths of Women Classed to Pregnancy and Childbearing.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
143. (*a*) Abortion	92	1	6	14	28	23	17	3
(*b*) Ectopic gestation	86	—	5	19	25	22	14	1
(*c*) Other accidents of pregnancy :—								
Accidental hæmorrhage ..	10	—	1	1	4	2	2	—
Ante-partum hæmorrhage	64	—	4	9	8	26	11	6
Uncontrollable vomiting	33	1	4	7	15	4	2	—
Carneous mole	1	—	1	—	—	—	—	—
Hydatid mole	4	—	—	—	—	2	1	1
Vesicular mole	1	—	—	—	—	—	1	—

Table L.—England and Wales, 1922 : Deaths of Women Classed to Pregnancy and Childbearing—*continued.*

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
Retroversion of gravid uterus	2	—	—	—	—	1	1	—
Hydramnios	4	—	—	—	2	2	—	—
Pregnancy apart from above complications :—								
With secondary causes as follows :—								
Anæmia	1	—	—	1	—	—	—	—
Chorea	6	1	2	1	1	1	—	—
Broncho-pneumonia ..	1	—	—	—	—	1	—	—
Pneumonia (type not stated)	1	—	—	—	—	1	—	—
Hæmatemesis	1	—	—	—	1	—	—	—
Without stated secondary cause	3	—	—	—	1	2	—	—
144. Puerperal hæmorrhage :—								
Placenta prævia	198	1	7	44	47	62	35	2
Adherent, retained, placenta	37	2	2	6	10	10	7	—
Accidental hæmorrhage ..	16	—	—	4	—	8	4	—
Post-partum hæmorrhage..	139	—	14	32	25	44	22	2
145. Other accidents or abnormalities of childbirth :								
Contracted pelvis	56	1	11	13	16	8	7	—
Craniotomy	4	—	1	—	1	1	1	—
Cæsarean section (reason unstated)*	20	—	5	6	7	2	—	—
Version	2	—	—	—	1	1	—	—
Instrumental delivery ..	12	—	2	4	4	—	2	—
Rupture of uterus ..	13	—	1	3	1	6	2	—
Rupture of vagina.. ..	1	—	—	—	—	1	—	—
Rupture of liver	1	—	—	—	—	1	—	—
Laceration of uterus ..	4	—	—	—	1	1	2	—
Laceration of perineum ..	3	—	—	1	—	—	2	—
Laceration of perineum and uterus	1	—	1	—	—	—	—	—
Malpresentation	22	—	2	3	7	6	3	1
Impacted fœtus	1	—	1	—	—	—	—	—
Inversion of uterus ..	17	2	6	5	2	2	—	—
Sub-involution of uterus ..	3	—	1	—	1	1	—	—
Inertia of uterus	2	—	1	—	—	1	—	—
Contraction of uterus ..	1	—	1	—	—	—	—	—
Rigid cervix of uterus ..	2	—	—	—	1	1	—	—
Rigid vagina and perineum	1	—	—	—	—	1	—	—
Prolapse of uterus.. ..	1	—	—	1	—	—	—	—
Abnormal fœtus	4	—	—	—	1	1	2	—
Difficult and prolonged labour	57	2	9	11	12	15	7	1
Childbirth apart from above complications :—								
With secondary causes as follows :—								
Anæmia	6	—	1	2	2	—	—	1
Vaso-motor paralysis	1	—	—	—	—	1	—	—
Acute endocarditis ..	1	—	—	—	—	1	—	—
Acute myocarditis ..	1	—	—	—	—	—	1	—

*In addition Cæsarean section was stated to have been performed in the case of 48 deaths included under other headings in this table—Miscarriage 1, vomiting of pregnancy 2, placenta prævia 5, placental separation 1, contracted pelvis 9, craniotomy 1, malpresentation 1, difficult and prolonged labour 9, puerperal albuminuria and convulsions 9, puerperal sepsis 10,—and of 20 other deaths classed to causes specified in Table LII.

Table L.—England and Wales, 1922 : Deaths of Women Classed to Pregnancy and Childbearing—*continued.*

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
Dilatation of heart ..	2	—	—	—	1	1	—	—
Bronchitis	4	—	1	—	1	—	2	—
Broncho-pneumonia	6	1	—	2	1	2	—	—
Pneumonia (type not stated)	20	—	1	3	8	5	1	2
Pleurisy	2	—	—	—	1	—	1	—
Asthma	1	—	—	—	—	—	1	—
Gastritis	3	—	—	1	1	1	—	—
Other diseases of the stomach	3	—	1	1	1	—	—	—
Diarrhœa and enteritis	4	—	1	2	—	1	—	—
Ischio-rectal abscess	1	—	—	—	—	1	—	—
Cholecystitis.. ..	1	—	—	—	—	1	—	—
Paralysis of bladder..	1	—	—	—	1	—	—	—
Without stated secondary cause	19	—	—	8	3	7	1	—
146. Puerperal sepsis :—								
streptococcal infection ..	5	—	—	1	1	1	2	—
gonococcal infection ..	1	—	1	—	—	—	—	—
bacillus coli infection ..	2	—	—	1	1	—	—	—
septic phlegmasia alba dolens, phlebitis, thrombosis ..	26	—	2	3	3	14	4	—
septic pneumonia	7	—	1	1	2	1	1	1
septic endocarditis ..	2	—	1	—	1	—	—	—
septicæmia	586	12*	100	172	135	108	48	11
sepsis	92	2	14	21	22	23	10	—
septic intoxication, sapræmia	58	1	9	17	17	7	5	2
pelvic peritonitis	14	2	5	3	1	1	2	—
peritonitis	65	3	7	19	18	12	4	2
salpingitis	14	—	2	1	5	3	3	—
metritis	4	—	—	2	2	—	—	—
endometritis	17	—	1	6	6	2	2	—
parametritis	7	—	—	2	2	3	—	—
perimetritis	1	—	—	—	—	1	—	—
erysipelas	2	—	—	1	1	—	—	—
pyæmia	30	2	4	5	7	9	3	—
pelvic cellulitis	25	1	1	8	6	7	2	—
cellulitis	2	—	—	—	1	1	—	—
pelvic abscess	3	—	1	—	1	1	—	—
blood poisoning	1	—	—	—	—	1	—	—
other specified septic conditions	8	1	2	—	4	1	—	—
"puerperal fever" ..	107	5	23	32	21	17	8	1
147. (1) Phlegmasia alba dolens and phlebitis, not returned as septic	54	—	6	9	10	17	9	3
(2) Puerperal embolism and sudden death	242	3	23	49	75	57	30	5
148. Puerperal albuminuria and convulsions :—								
Puerperal nephritis, albuminuria, &c. ..	180	4	27	48	48	32	18	3
Puerperal convulsions ..	376	31	89	83	75	64	30	4
149. Puerperal insanity	30	2	5	6	5	7	5	—
150. Puerperal diseases of the breast	6	—	2	—	—	1	2	1
Total	2,971	81*	419	694	712	672	340	53

* Including one aged 14 years.

The records of cases of puerperal fever notified are collated with those of births and deaths in Table LI.

The proportion to births of cases notified has increased somewhat in 1922 from 26 to 27 per 10,000, while the corresponding proportion of deaths from puerperal sepsis has remained stationary (Table XLIX).

This is no doubt a movement in the right direction, since Table LI and its predecessors for 1919–1921 give clear indication that notification of this form of disease is very incomplete. Thus in each of these years the urban excess of notifications in proportion to births has been much greater than that of deaths, with a corresponding excess for the rural districts of deaths in proportion to cases.

It can scarcely be doubted that this is due to defect of notification in the rural districts, particularly in view of the fact that in 1920 and 1921 the number of deaths returned from the rural districts of Wales considerably exceeded that of notifications. No instance of this occurs in Table LI, but the proportion of deaths to cases in the county boroughs of the South is suspiciously high at 97·8 per cent., whereas in 1921 it was only 63·0.

Table LI.—Puerperal Fever, 1922 : Prevalence and Fatality.

	Cases notified per 10,000 Births.					Deaths per 1,000 Cases notified.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	33	—	33	—	—	415	—	415
County Boroughs ..	41	38	18	37	38	420	318	978	886	432
Other Urban Districts ..	21	24	18	16	21	658	525	566	796	602
Rural Districts	14	19	15	18	16	840	620	731	806	709
All Areas	31	27	24	21	27	496	441	526	831	506

Table L gives full particulars of the deaths assigned to the puerperal state.

Table LII shows the causes of deaths stated to have been complicated by the existence of the puerperal state. The cause of death most largely represented in this table is influenza (258 deaths). Next to this come heart disease (227), pneumonia (170), and phthisis (83). Of 55 deaths of females at all ages from acute yellow atrophy of the liver and 34 at ages 15–45 (Table 17), 24 are seen to have been associated with pregnancy or childbirth.

Table LII.—England and Wales, 1922 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
Typhoid fever	3	—	1	1	1	—	—	—
Malaria	1	—	—	—	1	—	—	—
Measles	1	—	1	—	—	—	—	—
Scarlet fever	17	1	2	6	6	2	—	—
Whooping cough	1	—	1	—	—	—	—	—
Influenza with pneumonic complications specified	151	4	16	35	44	37	12	3
Influenza with other pulmonary complications specified	26	1	3	6	7	7	2	—
Influenza with non-pulmonary complications specified	81	1	11	22	21	14	11	1
Dysentery	1	—	—	—	—	—	1	—
Erysipelas	1	—	—	—	—	1	—	—
Poliomyelitis	1	—	1	—	—	—	—	—
Tetanus (bacillary)	2	—	1	1	—	—	—	—
Tuberculosis of respiratory system	83	—	13	19	21	19	10	1
Tuberculosis of nervous system	4	—	2	—	1	1	—	—
Tuberculosis of intestines and peritoneum	2	1	—	1	—	—	—	—
Tuberculosis of vertebral column	1	—	—	—	—	—	1	—
Tuberculosis of stomach	1	—	—	—	—	1	—	—
Disseminated tuberculosis	4	—	1	1	2	—	—	—
Syphilis	3	—	2	1	—	—	—	—
Gonococcal infection	1	—	—	1	—	—	—	—
Purulent infection, septicæmia	2	1	—	1	—	—	—	—
Cancer	7	—	—	4	2	1	—	—
Rheumatic fever	4	—	2	1	—	1	—	—
Osteo-arthritis	1	—	—	—	—	1	—	—
Diabetes	3	—	1	—	—	—	—	2
Pernicious anæmia	20	—	4	3	5	4	4	—
Other anæmias	2	—	—	1	—	1	—	—
Exophthalmic goitre	5	—	—	1	2	2	—	—
Other diseases of the thyroid gland	2	—	1	—	—	1	—	—
Diseases of the adrenals	2	—	—	—	1	1	—	—
Leukæmia	2	—	1	1	—	—	—	—
Purpura	2	—	—	2	—	—	—	—
Hæmophilia	1	—	—	1	—	—	—	—
Obesity	1	—	—	1	—	—	—	—
Meningitis	1	—	—	—	—	1	—	—
Amyotrophic lateral sclerosis	1	—	—	—	1	—	—	—
Cerebral hæmorrhage	1	—	—	1	—	—	—	—
Epilepsy	5	—	—	2	1	—	2	—
Mastoiditis	1	—	1	—	—	—	—	—
Otitis	1	—	—	—	—	—	1	—
Pericarditis	2	—	1	—	1	—	—	—
Infective endocarditis	4	—	1	—	3	—	—	—
Other acute endocarditis	12	—	—	2	4	4	2	—

Table LII.—England and Wales, 1922 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith—*continued.*

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and upwards.
Acute myocarditis	5	—	2	—	1	2	—	—
Angina pectoris	1	—	—	—	—	—	1	—
Mitral valve disease (alone) ..	65	—	9	17	13	20	6	—
Other or unspecified valvular disease	60	—	8	15	8	11	17	1
Fatty heart..	13	—	2	—	2	4	5	—
Other or unspecified myocardial disease	17	—	2	3	4	6	2	—
Other or undefined heart disease..	48	—	3	7	13	13	10	2
Aneurysm	1	—	—	—	—	1	—	—
Varices	5	—	—	2	—	2	—	1
Laryngitis	1	—	1	—	—	—	—	—
Bronchitis	31	—	4	6	6	10	5	—
Broncho-pneumonia	28	—	5	5	8	5	4	1
Pneumonia, lobar	85	—	3	25	17	29	11	—
Pneumonia, not otherwise described	57	—	7	12	18	15	5	—
Pleurisy	7	—	—	3	1	2	1	—
Infarct of lung	1	—	—	—	—	—	1	—
Asthma	5	—	1	2	—	—	2	—
Chronic interstitial pneumonia ..	2	—	—	—	1	1	—	—
Dental caries	1	—	—	1	—	—	—	—
Tonsillitis	2	—	—	—	1	—	1	—
Ulcer of the stomach	9	—	—	2	1	4	2	—
Inflammation of the stomach ..	3	1	—	—	1	1	—	—
Other diseases of the stomach ..	3	—	2	1	—	—	—	—
Diarrhœa and enteritis	6	—	—	2	2	—	1	1
Appendicitis and typhlitis ..	13	—	3	6	—	3	—	1
Hernia	3	—	—	—	—	1	2	—
Intestinal obstruction	16	—	2	2	4	5	2	1
Intestinal stasis	1	—	—	1	—	—	—	—
Acute yellow atrophy of the liver	24	3	5	4	6	4	2	—
Cirrhosis of the liver	1	—	—	—	—	—	—	1
Biliary calculi	2	—	—	—	—	—	2	—
Peritonitis of unstated origin ..	3	—	1	—	1	1	—	—
Chronic nephritis	40	—	2	8	9	10	10	1
Other diseases of the kidneys and their annexa	2	—	—	1	1	—	—	—
Cystitis	2	—	—	1	—	1	—	—
Cysts and other tumours of the ovary not returned as malignant	3	—	—	—	2	—	1	—
Tumours of the uterus not returned as malignant	11	—	—	3	6	2	—	—
Other diseases of the female genital organs	2	—	—	—	—	1	1	—
Pemphigus	1	1	—	—	—	—	—	—
Arthritis	1	—	—	—	1	—	—	—
Muscular dystrophy	1	—	—	—	—	1	—	—
Congenital malformation of heart	1	—	—	1	—	—	—	—
Suicide by lysol	1	—	—	—	—	1	—	—
Total	1,051	14	129	245	251	255	140	17

Anæsthetics.—Deaths during or connected with the administration of an anæsthetic have all, from 1911 onwards, been classified to the malady for which the anæsthetic was administered. In order, however, to continue the information previously afforded as to such cases, a secondary tabulation is now made of all deaths on the certificates relating to which any mention is made of the administration of an anæsthetic. These are classified in Table LIII according to sex and age and to the nature of anæsthetic, while the list appended to the table shows the condition for which the anæsthetic was administered and the sex and age of the patient, but not the kind of anæsthetic. Causes of death in this list are numbered in International List order. The bracketed figures following them denote the exact ages of the deceased, ages of males being printed thus (3) and of females thus (*3*).

Table LIII.—England and Wales, 1922 : Deaths under or connected with the Administration of various Anæsthetics.

Anæsthetic.		Age.													
		All Ages.	0–	1–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	65–
Chloroform	M.	34	1	4	5	2	2	3	–	–	2	2	2	4	4	3
	F.	*24*	–	*3*	*1*	*3*	–	–	*2*	*1*	*4*	*3*	*1*	*1*	*3*	*2*
Chloroform, delayed poisoning	M.	2	–	–	–	–	–	–	–	–	–	–	–	–	2	–
	F.	*3*	–	*2*	–	–	–	–	*1*	–	–	–	–	–	–	–
Chloroform and ethanesal	F.	*1*	–	–	–	–	–	–	–	–	–	*1*	–	–	–	–
Chloroform and ether	M.	48	1	10	3	–	–	3	1	3	3	3	5	4	8	4
	F.	*33*	*1*	*2*	*2*	*1*	*2*	*3*	*5*	*4*	*1*	*2*	*4*	*2*	*3*	*1*
Chloroform and ether; delayed poisoning	F.	*1*	–	–	–	*1*	–	–	–	–	–	–	–	–	–	–
Chloroform and ethyl chloride	M.	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–
Ether	M.	38	1	4	3	1	1	1	2	–	–	4	1	7	8	5
	F.	*29*	*1*	*2*	*2*	–	–	*1*	*1*	*2*	*4*	*5*	*2*	*4*	*3*	*2*
Ether, delayed poisoning	M.	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–
	F.	*2*	–	–	–	*1*	*1*	–	–	–	–	–	–	–	–	–
A.C.E. mixture	M.	3	–	1	1	–	–	–	–	–	–	1	–	–	–	–
	F.	*6*	*1*	*1*	*1*	*1*	–	–	*1*	–	*1*	–	–	–	–	–
Cocaine	F.	*1*	–	–	–	–	–	–	*1*	–	–	–	–	–	–	–
Ethanesal	M.	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–
	F.	*5*	–	–	–	–	–	–	*1*	–	–	*1*	–	*1*	*1*	*1*
Ethyl chloride	M.	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–
	F.	*1*	–	–	–	–	*1*	–	–	–	–	–	–	–	–	–
Ethyl chloride and ether	F.	*1*	–	–	–	–	–	–	–	–	–	*1*	–	–	–	–
Nitrous oxide	M.	6	–	–	–	–	2	–	1	–	1	1	–	–	1	–
	F.	*1*	–	–	–	–	–	–	–	–	–	*1*	–	–	–	–
Novocaine	M.	3	–	1	–	–	–	–	–	–	–	–	–	1	1	–
	F.	*3*	–	–	–	–	–	–	*1*	*1*	–	–	–	*1*	–	–
Stovaine	M.	5	–	–	–	–	–	–	–	–	–	–	1	1	1	2
	F.	*6*	–	–	–	–	–	–	*1*	–	–	*1*	*1*	*2*	–	*1*
Kind not stated*	M.	42	1	5	3	2	1	2	1	1	3	6	2	1	10	4
	F.	*34*	*1*	*2*	*2*	–	–	*4*	*4*	*3*	*3*	*3*	*5*	*2*	*2*	*3*
Total	M.	185	4	25	16	5	6	10	5	4	10	17	12	18	35	18
	F.	*151*	*4*	*12*	*8*	*7*	*4*	*8*	*18*	*11*	*13*	*18*	*13*	*13*	*12*	*10*

* The deaths under anæsthetics of kind not stated include those of 1 female from acetonuria, and of 2 males and 4 females from acidosis.

Conditions for which Anæsthetics were administered in the above cases.

8. Scarlet fever (*4*). 10. Diphtheria, tracheotomy (*3, 4*). 22. Poliomyelitis (6). 31. Tuberculosis of—lungs, right kidney and bladder, examination (44) ; right wrist and lungs, amputation of wrist (57) ; lymphatic glands, right kidney, larynx and lungs, removal of glands (59). 32. Tubercular meningitis, lumbar puncture (17). 33. Tuberculosis of small intestine and mesenteric glands (*18*). 36. Tuberculous—adenitis (9) ; glands of neck (12, 65, *8, 31*). 40. Gonorrhœa (21). 41. Septic finger (77). 43–49. Cancer of—lip (63) ; tongue (54) ; mouth (43) ; jaw (52, 65, *46*) ; tonsil (59) ; œsophagus (52) ; stomach (54, 56, 62, *59*) ; liver (*54*) ; duodenum (50) ; colon (57) ; intestine (46, 64, *64*) ; rectum (57) ; ovary (*51*) ; uterus (*36, 43, 45, 51, 53, 54, 55, 59, 61, 66*) ; breast (*45, 62*) ; rodent ulcer of face (71) ; skin of right leg (57) ; larynx (50) ; pancreas (42, 47) ; bladder (64) ; neck glands (51, 55) ; thyroid (43). 50. Papilloma of—larynx (*2*) ; rectum (*23*) ; lipoma of patella (35) ; tumour of—spinal canal (53) ; bladder (57) ; pelvic colon (74). 52. Osteo-arthritis, operation for straightening of legs (69). 60. Exophthalmic goitre (*30, 30, 54*) ;—thyroidectomy (*20*) ; removal of thyroid (*41*) ; goitre (*36, 67*) ;—excision of gland (*15*). 65. Lymphadenoma (*50*). 82. Facial neuralgia, operation to relieve pain (60). 86. Mastoid disease (5, 8, 23, 38, *8*) ; middle ear disease (*4*). 93. Hæmorrhoids (47, 63). 94. Adenitis of—neck (17) ; groin (*23*) ; removal of neck glands (*18*). 95. Bleeding artery (*48*) ; abdominal hæmorrhage (22). 97. Deviation of nasal septum (16) ; sinusitis—maxillary (26) ; nasal (*27*) ; frontal (*35*) ; diseased bone of nose (*33*) ; obstruction at back of nose (*35*) ; operation for nasal trouble (*29*). 98. Laryngitis (44). 102. Empyema (2, 2, 3, 6, 10, 24, 27, 29, 39, *6, 20, 25, 35*) ; pleurisy (*9*). 107. Abscess of lung (*1, 40*). 108. Extraction of teeth (19, 36, 36, 60, 67, *25, 26, 43, 78*) ; alveolar abscess (37) ; Ludwig's angina (22, 49) ; parotid abscess (*44*). 109. Enlarged tonsils (1, 10, 12, 24, *2, 12, 14, 26, 43*) ; enlarged tonsils and adenoids (1, 2, 6, 7, 9, *5, 10*) ; adenoids (7, *1*) ; abscess of throat (1). 111. Gastric ulcer (41, 47, 56) ; duodenal ulcer (51, 53, 57). 112. Hæmorrhage of stomach (42) ; dilated stomach (*2*). 114. Stercoral ulcers (*41*). 117. Appendicitis (3, 5, 8, 15, 20, 33, 39, 46, 53, 56, 60, 61, 68, *3, 8, 9, 12, 13, 14, 27, 30, 43, 45*) ; operation on appendix and fallopian tube (*41*). 118. Hernia (0, 1, 1, 2, 2, 3, 3, 5, 9, 33, 38, 40, 43, 51, 60, 68, 70, 81, 83, *40, 49, 53, 53, 56, 66, 76, 78*) ; intestinal obstruction (43, 44, 51, 59, 69, 71, 77, *31, 50, 59, 62, 73*) ; intussusception (0, 0, 1, 1, *0*) ; volvulus (10, 56, *0, 41, 76, 77*). 119. Diverticulitis (58). 123. Gallstones (62, 63, *48, 48, 52, 69*). 124. Cholecystitis (48, 58) ; abscess of liver (22). 125. Pancreatitis (*41*). 126. Peritonitis (*60*). 131. Pyonephrosis (*54*) ; pyæmic abscess of kidney (*57*) ; kinking of ureter (*35*). 132. Calculus of bladder (68) ;—catheterization (41). 133. Cystitis (1, 55) ;—draining of bladder (55) ; retention of urine

(52, 62). 134. Stricture of urethra (28, 42, 53). 135. Enlarged prostate (50, 64, 68, 76). 136. Circumcision (1, 2, 6) ; phimosis (39) ; ulcer of prepuce (47) ; hydrocele (41). 137. Cyst of ovary (*28, 43, 54*) ; tumour of ovary (*26*). 138. Pyosalpinx and ruptured tubal abscess (*29*) ; pelvic abscess (*33*). 139. Fibroid tumour of uterus (*43, 47*) ; fibro-myoma of uterus (*41*). 141. Prolapse of uterus (*45*) ; ventral fixation of uterus (*49*) ; amputation of cervix of uterus (*35*) ; operation on uterus (*27*) ; ovaritis (*20*) ; vaginal ulceration, examination (*64*). 142. Abscess of breast (*21*) ; mastitis (*38*). 143. Incomplete abortion (*29*) ; retention of dead child (*41, 46*) ; ectopic gestation (*39*) ; ante-partum hæmorrhage (*36*). 144. Placenta prævia (*46*) ; hæmorrhage from detached placenta, induced miscarriage (*28*). 145. Childbirth (*31, 32, 35, 40*) ; contracted pelvis (*38*) ; Cæsarean section (*22*) ; instrumental delivery (*28, 34*) ; malpresentation (*35*) ; obstructed labour (*21, 40*) ; draining out contents of uterus (*28*). 146. Removal of placenta (*28, 28*). 151. Gangrene of feet (61). 152. Carbuncle (48). 153. Abscess of thigh (24). 154. In-growing toe nail (*17*). 155. Infective osteitis of femur (5) ; necrosed bone of thumb (52) ; osteotomy for postural deformity of femur (*10*). 156. Displaced cartilage of knee (52). 159. Hare lip (0, 1) ; scar of hare lip (*2*) ; cleft palate (2) ; hare lip and cleft palate (*1*) ; nævus (*0, 0*). 165–203. Various forms of violence (2, 3, 4, 4, 6, 18, 20, 27, 32, 34, 39, 42, 43, 44, 47, 48, 56, 57, *6, 28, 31*). 205. "Operation" (45).

For the third time in succession the total number of deaths in Table LIII (336) is considerably higher than in any of the other years since 1910, for which alone the complete figures are available. For earlier years the record is contained in the tables of accidental deaths, but certain causes—strangulated hernia and cancer—were at this time preferred in tabulation to the anæsthetic used. As compared with the earliest year of the series available for comparison, 1911, deaths in 1922 have decreased at all ages under 25, to a total extent of 9 per cent., and increased at all over 25, to a total extent of 46 per cent., the resultant increase at all ages combined being 22 per cent.

It must not be assumed that in all the cases tabulated death has been due to the anæsthetic, though in many, owing to the nature of the condition occasioning its administration, there may be strong presumption of this. In many others, however, it is impossible to distinguish between deaths from other causes during the administration of an anæsthetic and deaths ascribable to the anæsthetic itself.

The nature of the anæsthetic was stated in only 77 per cent. of the cases. In 24 per cent. of those in which it was stated chloroform is recorded as the only anæsthetic administered, and in 36 per cent. as administered in combination with some other agent, so that in only 40 per cent. of these cases was chloroform not used. The proportion for chloroform alone is much the lowest for any of the twelve years compared, while that for chloroform

in combination is the highest, and that for cases in which no chloroform was administered is also higher than in any previous year, and is increasing rapidly.

The changes which have taken place since 1911 in regard to these matters are so great that it may be of interest to put them on record in the following table.

Table LIV.—England and Wales. Deaths under or connected with the Administration of Anæsthetics.

	Number of Deaths.						Anæsthetic stated, per cent. of total.	Chloroform (alone), per cent. of total stated.	Chloroform in combination, per cent. of total stated.	Chloroform not used, per cent. of total stated.
	Total.	Nature of Anæsthetic.		Chloroform.		No Chloroform.				
		Stated.	Unstated.	Alone.	In combination.					
1911..	276	214	62	142	46	26	78	66	22	12
1912..	283	181	102	117	31	33	64	65	17	18
1913..	296	185	111	110	33	42	63	59	18	23
1914..	300	193	107	110	36	47	64	57	19	24
1915..	261	171	90	102	39	30	66	60	23	17
1916..	306	200	106	112	52	36	65	56	26	18
1917..	280	196	84	106	59	31	70	54	30	16
1918..	279	188	91	81	61	46	67	43	32	25
1919..	302	232	70	96	74	62	77	41	32	27
1920..	366	282	84	96	95	91	77	34	34	32
1921..	337	264	73	82	87	95	78	31	33	36
1922..	336	260	76	63	93	104	77	24	36	40

It will be seen that after a period of nine years, 1911–19, during which the number of these deaths varied only between 261 and 306 it suddenly increased in 1920 to 366, and has remained since at a higher level than during any of the nine earlier years. The table further shows that a striking change has taken place as regards the nature of the anæsthetic employed where a fatality occurs. In 1911 chloroform was used alone in 66 per cent. of those cases in which the nature of the anæsthetic was stated, but since then this proportion has fallen, almost continuously, to a minimum of 24 per cent. in 1922. At the same time the proportion of cases in which no chloroform was employed has risen almost continuously, from a minimum of 12 per cent. in 1911 to a maximum of 40 in 1922, while that of deaths under chloroform in combination with other anæsthetics has risen from 22 per cent. in 1911, and 17 in 1912, to a maximum of 36 in 1922. How far these proportions reflect the relative risk to life of the anæsthetics employed, and how far the frequency of their employment, it is, of course, impossible to tell from the information provided by the death registers, but the facts as derivable from these are stated in the hope that they may be of use to anæsthetists, who may be in a position to form some estimate how far the changes recorded depend upon changing frequency of use and how far upon changing fatality in use of the agents compared. Other changes during the period than those shown in Table LIV include the increase of deaths under ether or " gas and ether " from 20 in 1911 to 70 in 1922, representing respectively 9 and 27 per cent. of the total cases where

the nature of the anæsthetic was stated; of deaths under ethanesal, novocaine or stovaine (without chloroform) from 1 in 1911 to 23 in 1922, and of deaths under nitrous oxide alone from 3 in 1911 to 7 in 1922. Whether and to what extent the increase of deaths under ether can be attributed to substitution during the same period of "open" for "closed" methods of ether administration, is again a question appropriate for discussion only by anæsthetists themselves.

Status Lymphaticus and Anæsthetics.—In addition to the 176 deaths from status lymphaticus primarily classified to diseases of the thymus in Table 17, there were 28 deaths under anæsthetics in the case of which record was made of the presence of this condition, but which were referred to the condition occasioning the administration of the anæsthetic.

The sex and age distribution of these was as follows:—

	All Ages.	0–	5–	10–	15–	20–	25–	35–
Males	13	6	5	–	–	1	–	1
Females	15	3	1	3	1	2	4	1

165–174. **Suicide.**—Deaths from this cause numbered 3,876, 2,817 of males and 1,059 of females. These numbers include only the deaths definitely attributed to suicide. In addition to them, 1,129 others, 841 of males and 288 of females, were returned under "open verdicts" signifying that it could not be determined whether the violence which caused death resulted from accident, homicide or suicide (*see* Part I, page 421). These deaths have all been classed as due to accident, but it is to be remembered that a number of them must have been due to suicide. The great bulk of them, 613 of males and 170 of females, are cases of drowning returned by coroners' juries as "found drowned."

Mortality from suicide fell suddenly during the war for both sexes, but particularly for males, to a rate below any recorded for many years past. The lowest point was reached for each sex in 1917, but increase since then in the rates for both sexes restored the pre-war level in 1921, with further slight increase in 1922. Owing, however, to the increasing age of the population, the crude rates compared in Table 5 are now subject to considerable decrease on standardization.

204, 205. **Ill-defined Causes of Death.**—This heading in the International List of Causes of Death, to which 1,831 deaths have been allocated, excludes the ill-defined diseases of infancy and old age, 160 (1) and 164 (2). In the more comprehensive sense resulting from their inclusion, the deaths from ill-defined causes in 1922 numbered 33,648, or 6·91 per cent. of the total,

as against 51,041, or 9·67 per cent., in 1911, all the items included contributing to the decline. Deaths of males from causes in this group other than " old age " considerably exceed those of females, but an excess for females of 41 per cent. from old age results in a total excess for the whole group for females of 23 per cent.

Inquiries sent to medical practitioners and coroners requesting further information as to indefinitely certified deaths amounted to 6,152, and to these 5,404 replies were received, with results to classification the most important of which are set out in Table LV.

Reference to this table will demonstrate the ambiguity of certain forms of return which to the minds of the practitioners using them may be perfectly definite, because always used by them in a certain definite sense. This meaning, however, may be quite different from that associated with the same term in the minds of other practitioners.

Table LV.—England and Wales, 1922 : Replies to Inquiries respecting Indefinitely Certified Causes of Death.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to various important headings.
Croup	29	29	Diphtheria 5, Laryngismus stridulus 4, Laryngitis 13.
Membranous laryngitis	5	5	Diphtheria 4.
Pyæmia, septicæmia, etc.	151	114	Syphilis 6, Diseases of the teeth and gums 13, Puerperal sepsis 11, Diseases of the skin 12.
Tuberculosis ..	210	210	Tuberculosis of respiratory system 141, Tuberculosis of intestines and peritoneum 8, Tuberculosis of vertebral column 5, Disseminated tuberculosis 38, Other forms of tubercle 16.
Cancer (part or organ not stated) ..	889	812	Part or organ stated in 810 cases.
Tumour, growth, etc.	587	427	Syphilis 5, Cancer 340.
Rheumatism ..	45	44	Rheumatic fever 17, Chronic rheumatism 6, Osteo-arthritis 4.
Encephalitis ..	97	82	Influenza 2, Encephalitis lethargica 26, Other forms of encephalitis 26, Meningitis 2.
Basal or basic meningitis	79	68	Meningococcal meningitis 22, Tuberculosis of nervous system 30, Meningitis—other forms 6.
Posterior or post, basal or basic meningitis	78	66	Meningococcal meningitis 39, Tuberculosis of nervous system 22.
Cerebro-spinal meningitis	139	128	Meningococcal meningitis 95, Tuberculosis of nervous system 9.
Spinal sclerosis ..	48	43	Tabes dorsalis 4, Other diseases of spinal cord 2, Disseminated sclerosis 36.
Cerebral sclerosis ..	24	22	Disseminated sclerosis 13.

Table LV.—England and Wales, 1922 : Replies to Inquiries respecting Indefinitely Certified Causes of Death—*continued*.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to various important headings.
Paraplegia	90	62	Syphilis 7, Diseases of the spinal cord 26, Cerebral hæmorrhage, apoplexy 7.
General paralysis (outside asylums) ..	73	67	Syphilis 3, Cerebral hæmorrhage, apoplexy 4, General paralysis of the insane 42, Disseminated sclerosis 2.
Paralysis	68	56	Syphilis 3, Alcoholism 3, Tabes dorsalis 2, Diseases of the spinal cord 10, Cerebral hæmorrhage, apoplexy 18, Arterio-sclerosis 5.
Acute primary pneumonia	111	105	Influenzal pneumonia 7, Broncho-pneumonia 19, Lobar pneumonia 77.
Fibroid phthisis ..	96	90	Tuberculosis of respiratory system 55, Chronic interstitial pneumonia 30.
Hæmoptysis ..	50	38	Tuberculosis of respiratory system 22.
Stomatitis	34	33	Syphilis 5, Thrush, aphthous stomatitis 19.
Stricture of œsophagus	62	55	Syphilis 2, Cancer 41.
Hæmatemesis ..	26	16	Cancer 3, Gastric ulcer 8, Cirrhosis of liver 1.
Pyloric obstruction, stenosis, etc. ..	48	38	Cancer 12, Gastric ulcer 18.
Jaundice	70	52	Cancer 15, Cirrhosis of liver 5, Biliary calculi 9.
Peritonitis	204	143	Tuberculosis of peritoneum, etc., 9, Cancer 3, Gastric ulcer 13, Appendicitis 56, Intestinal obstruction 6, Diseases of female genital organs 8, Puerperal sepsis 7.
Pemphigus (of infants)	119	95	Syphilis 39.
Hydrocephalus ..	89	82	Tuberculosis of nervous system 10, Syphilis 4, Congenital hydrocephalus 46.
Violence	247	245	Precise form of suicide 49, Injury by drowning 3, Injury by fall 42, Injury in mines and quarries 23, Injury by machines 7, Injury by crushing 32.
Ascites, dropsy ..	26	22	Cancer 3, Diseases of the heart 9, Cirrhosis of liver 4, Chronic nephritis 2.
Syncope, heart failure (ages 1–70) ..	120	103	Influenza 5, Diseases of the heart 58, Arterio-sclerosis 6, Bronchitis 7.
Operation	226	206	Cancer 17, Diseases of thyroid gland 6, Pneumonia 6, Tonsillitis 13, Gastric ulcer 9, Appendicitis 5, Hernia, intestinal obstruction 19, Biliary calculi 13, Uterine tumour 27, Violence 6.
Other indefinite forms of certificate ..	1,264	1,021	———
Total ..	5,404	4,579	———

The total additions to certain definite headings resulting from these inquiries were as follows :—To meningococcal meningitis 158 ; to tuberculosis of the respiratory system 252 ; to tuberculosis of the nervous system 80 ; to other forms of tuberculosis 127 ; to venereal diseases 151 ; to cancer 518 ; to disseminated sclerosis 61 ; to arterio-sclerosis 61 ; to ulcer of the stomach or duodenum 78 ; to appendicitis and typhlitis 84 ; to puerperal sepsis 53 ; and to congenital malformations 69.

POPULATION.

The total population of England and Wales as at the 30th June, 1922, has been estimated at 38,158,000 persons, 18,225,000 being males and 19,933,000 females.

The method adopted in arriving at these figures is that which was used with apparent success in the decennium 1911–20, and consists of taking the 1921 Census population as a starting point, adding the births and immigrants and deducting the deaths and emigrants between the date of the Census and the 30th June, 1922. If the several records of movement were exact the resulting population estimate would be similarly precise, but while the system of registration in this country may be regarded as providing a fairly complete record of births and deaths, an exact statement of migration is not obtainable. The allowance for the latter is itself an estimate only, based upon returns compiled by the Board of Trade, the Home Office, and the several War Departments ; it is incomplete in that it can take no account of the passenger traffic between the several countries of the United Kingdom in respect of which no records are available. The error to which the population estimates are thus subject is one which will tend to grow in degree as the date of the preceding Census becomes more remote, but for 1922, the year following the Census, it can probably be disregarded.

Age Distribution.—The analysis of the sex population totals into their respective age components is shown in Table LVI. It will be observed that two alternative distributions are given in the Table, the reason of which is explained hereafter. Each has been derived from the corresponding 1921 distribution by the survivorship method used in recent years ; this, briefly, consists of (1) obtaining the year's deaths arising from the population at each age in 1921, and treating the survivors as the population at the next higher age in 1922, (2) completing the table by the addition of the population aged 0–1, represented by the survivors at the middle of 1922 of the births occurring between the middle of 1921 and the middle of 1922, and (3) adjusting the results of these two operations in respect of migrants in accordance with such age statistics as are available in respect of them.

The first three columns of Table LVI. give the distribution which has been used for the statistics published in the tabular portion of the present review.* When this was issued the classified results of the 1921 Census were not available, and the age estimates were therefore obtained in the manner described from the 1921 age estimates which themselves had been similarly built up year by year from the distribution obtained from the National Register of 1915. The 1921 Census tabulation by age has, however, recently been completed, and the provisional estimates therefore fall to be revised in the light of the later

* Statistical Review, 1922 (Part I). Table 3.

Table LVI.—England and Wales.—Estimates of Age Distribution of the Population in June, 1922.

Age Group.	Distribution derived from estimate published in 1921.			Distribution based upon 1921 Census Classification.			Difference expressed as percentage of Census Distribution.		
	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.
All ages ..	38,158,000	18,225,000	19,933,000	38,158,000	18,225,000	19,933,000	*0·0*	*0·0*	*0·0*
0— ..	771,531	391,531	380,000	772,446	392,094	380,352	*— 0·1*	*— 0·1*	*— 0·1*
1— ..	791,358	401,132	390,226	761,325	385,971	375,354	*3·9*	*3·9*	*4·0*
2— ..	824,630	418,673	405,957	812,227	412,268	399,959	*1·5*	*1·6*	*1·5*
3— ..	539,116	272,258	266,858	547,077	276,745	270,332	*— 1·5*	*— 1·6*	*— 1·3*
4— ..	558,458	281,668	276,790	533,278	268,339	264,939	*4·7*	*5·0*	*4·5*
0— ..	3,485,093	1,765,262	1,719,831	3,426,353	1,735,417	1,690,936	*1·7*	*1·7*	*1·7*
5— ..	3,570,361	1,798,499	1,771,862	3,406,937	1,711,063	1,695,874	*4·8*	*5·1*	*4·5*
10— ..	3,706,130	1,859,453	1,846,677	3,633,374	1,826,324	1,807,050	*2·0*	*1·8*	*2·2*
15— ..	No estimates made.		1,781,579	3,540,754	1,758,727	1,782,027	—	—	*— 0·0*
20— ..			1,697,990	3,194,626	1,490,505	1,704,121	—	—	*— 0·4*
25— ..			1,684,979	2,972,630	1,340,067	1,632,563	—	—	*3·2*
30— ..			1,619,318	2,812,931	1,285,999	1,526,932	—	—	*6·1*
35— ..			1,531,020	2,724,460	1,257,286	1,467,174	—	—	*4·4*
40— ..			1,374,039	2,635,617	1,236,803	1,398,814	—	—	*— 1·8*
15—45 ..	18,243,808	8,554,883	9,688,925	17,881,018	8,369,387	9,511,631	*2·0*	*2·2*	*1·9*
45— ..	2,177,910	991,112	1,186,798	2,420,735	1,163,443	1,257,292	*—10·0*	*—14·8*	*— 5·6*
50— ..	1,921,490	904,987	1,016,503	2,070,221	1,000,192	1,070,029	*— 7·2*	*— 9·5*	*— 5·0*
55— ..	1,587,994	762,235	825,759	1,677,467	802,793	874,674	*— 5·3*	*— 5·1*	*— 5·6*
60— ..	1,249,316	604,656	644,660	1,310,431	616,096	694,335	*— 4·7*	*— 1·9*	*— 7·2*
65— ..	934,773	440,134	494,639	995,219	454,056	541,163	*— 6·1*	*— 3·1*	*— 8·6*
70— ..	667,639	297,623	370,016	680,950	293,042	387,908	*— 2·0*	*1·6*	*— 4·6*
75— ..	382,348	157,496	224,852	398,144	160,075	238,069	*— 4·0*	*— 1·6*	*— 5·6*
80— ..	162,412	62,903	99,509	179,336	67,468	111,868	*— 9·4*	*— 6·8*	*—11·0*
85 & upwards	68,726	25,757	42,969	77,815	25,644	52,171	*—11·7*	*0·4*	*—17·6*

material. Estimates based upon the new figures are shown in the fourth, fifth and sixth columns of Table LVI., and these have been used for all the comparative statistics referred to in the text portion of the Review for this year. The discrepancies in the provisional figures disclosed by the differences in the two distributions are being examined with a view to amending the intercensal populations used hitherto ; the errors have no doubt accumulated more or less gradually over the past decennium, reaching their maxima in 1921, maxima large enough unfortunately at certain age groups to have rendered misleading some of the age statistics of recent years published prior to this volume.

The average ages of the 1922 population according to the revised age distribution are 30·0 and 31·3 for males and females respectively, representing increases of 0·1 for each sex over the corresponding averages for 1921. Between 1911 and 1921 the average ages increased by 1·9 and 2·1 respectively.

Local Populations.—The commencement of a new intercensal period is of particular interest in that it usually forms the most suitable opportunity for considering how far past methods of estimating local populations have fulfilled their object and whether, and if so what, modifications of method can be introduced with a view to improving the comparability of the populations and the resulting vital statistics in various portions of the country.

Prior to 1914, the convenient, if somewhat arbitrary assumption was made that the change in the population of each area in an uncompleted intercensal period was proportionate to the movement in that area during the immediately preceding intercensal period. The weakness of such a basis was never disguised ; the movement of a large majority of the populations concerned might in normal circumstances be expected to be continuous, but it would rarely happen that the force and direction of the changes would remain constant over the somewhat extended period to which the formula had to apply while the result of any abnormal growth would not be reflected at all in the period at which it occurred, but might well be extended into a decennium following its cessation. The disturbance created by the War rendered the method more than usually unreliable and it was fortunately possible to abandon it in favour of others based upon fresh sources of information which the War brought in its train. Such were the National Register of 1915 and the successive sugar and other food registers, and these sufficed for the purpose practically throughout the remainder of the decennium.

At the present time the emergency registers are no longer available and even the earlier empirical method is virtually ruled out of consideration in view of the fact that its basis would rest on the several changes between 1911 and 1921, the projection of which into the present decennium would be almost impossible to defend in practice. Resort has therefore been had to other and in some respects less direct evidence of local

movement. In framing a basis of estimation, two primary conditions have to be satisfied, viz., (1) that the several individual estimates shall aggregate to the far more reliably calculated figure of the total national population, and (2) that the method shall be capable of impartial application throughout the whole of the country restricting it in its scope therefore to evidences of movement which are available for all areas. The yearly increases and decreases by births and deaths, commonly referred to as natural growth, are known precisely in respect of every district, and the whole of the error attending the process of estimation may be said to lie in the assessment of the migration portion of the movement.

The only general information available which could be regarded as bearing on this was that given by the changes in the registers of Local Government Electors between 1921 and 1922, and this was experimented with and ultimately adopted in the formula described below.

It is not claimed, however, that the results are other than experimental in character, for while it is reasonable to suppose that any marked migration, either inwards or outwards, would duly make its impression upon the electoral figures, it does not follow that changes in the register are all attributable to migration. In the first place the mere attainment of franchise age of the existing population, so far as this is not counterbalanced by the deaths of persons already on the register, affects the electorate and falls with varying weight in areas of different age constitution, and will therefore introduce an error which cannot be measured and allowed for until the Census age classification of all the local populations in question has been completed. Again, persons admitted to the franchise are restricted to certain classes above the ages of 21 and 30 in the case of males and females respectively, numbering only about 40 per cent. of the total population and the assumption has to be made that movements within the franchise qualifications correspond to similar movements in the whole population. Finally, electoral registration can only take place after six months residence in an area, and such migration change as is reflected is that of a period at least six months prior to the period to which the records relate. Whatever the defects of the migration factor used on this occasion, the resulting population estimates at a date only twelve months after the Census will probably be accepted as very slightly inferior to the Census distribution itself, and for the future the Census classification of local populations by age will provide a means of freeing the electoral movements of the elements of change represented by their own natural growth.

The 1922 mid-year populations actually adopted were obtained by assuming that the net rate of population increase in each area was

$$A + xB - y$$

where A = local rate rate of natural increase mid 1921–mid 1922

Table LVII.—England and Wales, and Geographical Areas.—Estimated Civilian Population by Sex and Age in the middle of the Year 1922.

(Figures given to the nearest hundred.)

		All Ages.	0—	5—	15—	25—	35—	45—	55—	65—	75 and upwards.
All areas :—											
England and Wales	M	18,038,0	1,735,5	3,537,4	3,148,6	2,572,7	2,466,7	2,158,1	1,418,8	747,0	253,2
	F	19,933,0	1,690,9	3,502,9	3,486,2	3,159,5	2,866,0	2,327,3	1,569,0	929,0	402,2
North ..	M	6,171,3	602,5	1,207,1	1,109,6	904,8	857,0	737,5	462,8	227,1	62,9
	F	6,677,6	590,6	1,200,2	1,195,5	1,073,0	969,7	772,2	501,5	275,6	99,3
Midland ..	M	5,753,0	551,8	1,139,6	1,011,8	802,4	778,5	677,5	452,5	247,9	91,1
	F	6,281,7	535,7	1,126,6	1,095,9	975,1	890,4	722,5	492,5	303,2	139,8
South ..	M	4,772,2	443,4	921,1	783,9	667,2	652,9	590,4	407,0	222,9	83,3
	F	5,633,6	430,6	908,9	954,6	903 7	826,6	689,9	482,0	297,0	140,3
Wales ..	M	1,341,5	137,8	269,6	243,2	198,4	178,2	152,9	96,5	49,1	15,9
	F	1,340,1	134,0	267,2	240,2	207,7	179,3	142,7	93,0	53,2	22,8
London ..	M	2,082,5	199,2	398,1	355,7	311,3	288,8	255,3	165,4	82,7	25,9
	F	2,441,4	194,3	398,9	443,9	412,3	356,3	288,0	189,8	110,0	47,9

County Boroughs	M	6,035,2	594,2	1,189,4	1,057,0	888,3	843,3	727,1	451,7	220,6	63,6
	F	6,729,0	581,2	1,189,8	1,218,7	1,087,5	976,9	776,2	504,0	283,0	111,7
North ..	M	3,252,1	320,0	636,6	580,6	483,3	457,4	394,8	239,4	111,5	28,5
	F	3,577,9	314,2	636,8	651,1	582,5	524,6	413,7	263,3	141,8	49,9
Midland ..	M	1,911,6	190,0	381,4	337,4	279,3	264,2	225,5	141,1	71,3	21,5
	F	2,127,3	185,1	382,2	391,5	342,3	303,3	239,9	156,0	89,8	37,2
South ..	M	600,2	57,3	118,7	89,7	82,0	84,4	76,1	52,0	28,9	11,1
	F	751,4	55,7	118,1	123,8	117,8	112,3	94,3	66,7	41,9	20,8
Wales ..	M	271,3	26,9	52,7	49,4	43,8	37,3	30,7	19,2	8,9	2,5
	F	272,4	26,2	52,7	52,3	44,9	36,7	28,3	18,0	9,5	3,8
Other Urban Districts	M	6,099,5	582,8	1,207,3	1,059,6	868,8	844,9	733,7	473,4	246,3	82,7
	F	6,803,6	567,1	1,196,3	1,190,9	1,076,3	986,4	799,4	534,2	316,3	136,7
North ..	M	2,064,2	198,2	400,3	368,8	303,3	288,9	248,2	157,0	78,1	21,4
	F	2,236,0	194,4	399,1	394,9	358,8	325,7	262,3	172,0	95,1	33,7
Midland ..	M	2,231,3	211,0	446,8	390,3	314,1	309,1	266,3	171,0	90,4	32,2
	F	2,497,4	204,6	441,7	444,5	393,3	361,5	289,9	191,9	116,5	53,5
South ..	M	1,151,7	103,7	225,3	182,3	155,1	159,6	145,1	101,0	56,8	22,8
	F	1,419,7	100,0	221,4	233,5	223,0	212,4	179,3	128,2	81,7	40,2
Wales ..	M	652,3	69,9	134,9	118,2	96,3	87,2	74,1	44,4	21,0	6,3
	F	650,5	68,1	134,1	118,0	101,2	86,8	67,9	42,1	23,0	9,3
Rural Districts	M	3,820,9	359,3	742,6	676,2	504,3	489,7	442,1	328,3	197,4	81,0
	F	3,959,0	348,3	717,9	632,7	583,4	546,4	463,7	341,0	219,7	105,9
North ..	M	855,0	84,3	170,2	160,2	118,2	110,7	94,5	66,4	37,5	13,0
	F	863,7	82,0	164,3	149,5	131,7	119,4	96,2	66,2	38,7	15,7
Midland	M	1,610,1	150,8	311,4	284,1	209,0	205,2	185,7	140,4	86,2	37,4
	F	1,657,0	146,0	302,7	259,9	239,5	225,6	192,7	144,6	96,9	49,1
South ..	M	937,8	83,2	179,0	156,2	118,8	120,1	113,9	88,6	54,5	23,5
	F	1,021,1	80,6	170,5	153,4	150,6	145,6	128,3	97,3	63,4	31,4
Wales ..	M	417,9	41,0	82,0	75,6	58,3	53,7	48,1	32,9	19,2	7,1
	F	417,2	39,7	80,4	69,9	61,6	55,8	46,5	32,9	20,7	9,7

B = local rate of electoral increase Autumn Register 1921–Autumn Register 1922, and x and y were constants applicable to all areas, their determination being governed by the considerations (*a*) that the increases and decreases produced by the formula should aggregate to the increase estimated for the country as a whole, and (*b*) that the range of variations should, in the absence of any evidence to the contrary, be roughly similar in extent to the range of variations in previous periods. Full weight was thus given to the local natural increase while for migration the most suitable value of x appeared to be about $\frac{1}{4}$, y being the complementary adjustment required to ensure compliance with condition (*a*) just referred to.

An exception to the basis thus described was however made in the case of the Administrative County of London and its constituent Boroughs, in respect of which population estimates had been made earlier in the year for the purposes of the Equalization of Rates Act, 1894. For the whole County the estimate was not very different from that which would have resulted from the use of the above formula, but, in the distribution of the county population among the Metropolitan Boroughs, use was also made of certain housing returns provided by the Local Authorities under the said Act, and these estimates have been retained unaltered in the present Review.

Non-Civilian Population:—It will be observed in the tables in which the estimated local populations are given (Table 14 of Part I. and Table E of Part II.) that the local deaths and death-rates refer to civilians only and in conjunction with these a civilian population should preferably be used instead of a total population containing a number of non-civilians. In the majority of areas, however, the two populations may be regarded as sufficiently identical and no special measures have been regarded as necessary in respect of them, but in a few areas in which the non-civilians were proportionally numerous estimates of civilian populations have been provided in addition to total populations and are shewn in footnotes appended to the tables.

Institutions:—The populations of Hospitals, Infirmaries, Asylums, etc., remain credited to the areas of enumeration, notwithstanding that some persons so included may, on a strict residence classification, more properly be assigned elsewhere.

Local Age Distributions, 1922.—Local sex and age distributions have been prepared for the large geographical aggregates shown in Table LVII. It is hoped that in future these figures will be ready in time for use in connection with the Birth and Death statistics to which they may be related, but as explained on an earlier page, the basic Census material from which they are derived has only recently become available so that they are being included here as a special measure for this year. Regarding their preparation, the populations at ages under five were obtained by the survivorship method (*see* page 110), and for later ages the total

populations estimated by the formula given in the preceding section were distributed in accordance with the Census age and sex distribution of the geographical unit, the resulting figures being thereafter modified to allow for the change between 1921 and 1922 of the age distribution of the total population of the country already referred to.

United Kingdom.—The populations of each of the countries of the United Kingdom, as furnished by their respective Registrars-General, are shown for each year from 1873 in Table A on page 2 (Part II), and the 1922 estimates of the resident populations of each of the Local Government divisions of England and Wales, together with County aggregates, in Table 14 on page 62 (Part I), and Table E on page 7 (Part II).

MARRIAGES.

The marriage statistics of 1922 together with comparative figures for previous years are given in Table B on page 4 of Part II.

The marriages registered in England and Wales during the year 1922 numbered 299,524, corresponding to a rate of 15·7 persons married per 1,000 of the population of all ages and conditions. The number so registered is 21,328 less than the corresponding figure for 1921, a drop of 6·6 per cent., and more than 80,000 below that of 1920. The latter year it will be remembered (*see* Table C) marked the termination of the phenomenal rise in the marriage rates from 13·8 per 1,000 in 1917 to 20·2 in 1920, a rise which in any event must be generally associated with the effects of the War, and which was undoubtedly directly affected by the inclusion of many marriages which would in normal circumstances have taken place at an earlier period. The marriages of 1920 were the highest on record in the country both in point of numbers and of the rate per 1,000 total population and the decline which has since set in is therefore little more than the natural reaction which would be expected in such circumstances and which must mask for some time the permanent features of the trend of marriage rates in the country.

The preference for the third quarter of the year noticeable in the records since the beginning of the present century was maintained in 1922, the marriages in this period being nearly 30 per cent. of the total. The rate for the first quarter similarly retained its customary place in being lower than that of either of the later quarters and is the lowest, as the rate for 1921 was the highest of the corresponding quarters shown for any period since 1841 in Table D.

The annual marriage-rate expressed in terms of total population, which gives the present year a slight lead over those immediately preceding the War and is little different from the average

of all years since 1838, can however only be accepted as a comparative measure of conditions over short periods of time during which the proportions and age incidence of the marriageable portion of the community are approximately constant. For long range comparisons or during periods of disturbance such as that of the past decade, regard must be had to the character of the several populations providing the marriages and the availability of the analyzed results of the 1921 Census now enables the post-war fluctuations to be contrasted more accurately with the more stable rates of earlier periods.

The following table shows the distribution of the marriageable population at each of the Censuses from 1871 to 1921 :—

Table LVIII.—England and Wales. Proportion and Distribution of Marriageable Population aged 15 and Upwards as Enumerated at each Census 1871–1921.

Year.	Marriageable population over 15 per 1,000 total population.	Distribution of 1,000 marriageable population aged 15 and upwards.					
		Bachelors and Widowers.	Spinsters and Widows.	Bachelors.	Widowers.	Spinsters.	Widows.
1871 ..	294	459	541	399	60	409	132
1881 ..	296	460	540	403	57	410	130
1891 ..	312	456	544	402	54	420	124
1901 ..	328	455	545	403	52	428	117
1911 ..	330	456	544	404	52	429	115
1921 ..	325	431	569	379	52	437	132

From the first column of this table it will be seen that the proportion of the marriageable population to total population which had been growing steadily up to 1911 dropped back by about $1\frac{1}{2}$ per cent. during the past decennium mainly as the result of war mortality. This method of statement, however, greatly overstates the marriageability of the population for though, theoretically, every unmarried or widowed person over the age of, say, 15 may be regarded as exposed to the chance of marriage, the total possible marriages is in fact virtually limited in this country to the number of marriageable males ; before the war the frequency of such males remained fairly stationary at a figure considerably below that of females, the relative proportions being about 456 and 544 respectively, but in 1921 the gap had been further widened, the male proportion having fallen to 431 and the female correspondingly increased to 569 per 1,000 of the two sexes taken together. The decline in the effective marriageability of the population between 1911 and 1921 when estimated on the male proportion alone is thus from 301, ($330 \times \cdot 456 \times 2$)

per 1,000 of the whole population in 1911 to 280, (325 × ·431 × 2), in 1921 a drop of nearly 7 per cent. instead of the 1½ per cent. indicated by the first column of the table.

The fall in the male proportion is located wholly amongst bachelors, but amongst females the rise is distributed, the greater share falling to the widows.

The effect of these changes in the marriageable population is shown in the next table, in which the marriage rates of men and women after falling steadily from 1871 to 1911 show in 1921 an increase from 50·8 to 60·4 per 1,000 in the case of men, a jump of 19 per cent., as compared with one from 42·5 to 45·8, or a rise of about 8 per cent. in the case of women ; the several sex-rates for each period are almost exactly in inverse proportion to the numbers which may be conveniently termed " exposed to risk," showing that the differences in the sex rate changes from time to time are almost wholly due to the changes in the exposed to risk, and are but little disturbed by the relative few who import their partners from abroad or who conversely themselves leave the country for the purpose of marriage.

Table LIX.—England and Wales. Annual Number of Marriages of Men and Women per 1,000 Population of each Sex aged 15 and over, 1871–1921.

NOTE.—The annual numbers of marriages have been taken as the average of the three years about each Census prior to 1921. During the 1921 period the marriage-rates have been changing rapidly and it has been deemed preferable to show the rates for 1920, 1921 and 1922 separately, the marriages of these years being expressed per thousand of the 1921 Census population in each case.

Year.	Bachelors, Widowers, Spinsters and Widows.	Bachelors and Widowers.	Spinsters and Widows.
1871	57·2	62·3	52·9
1881	51·5	56·0	47·6
1891	49·8	54·6	45·7
1901	48·7	53·5	44·7
1911	46·3	50·8	42·5
1920	61·7	71·5	54·2
1921	52·1	60·4	45·8
1922	48·6	56·4	42·8

Marriage-rates by ages which provide a much more exact statement of the incidence and intensity of marriage are shown in Tables LX and LXI. The former relates the marriages of 1921 with the Census population of that year and gives by single years of age up to 21, and by quinquennial groups thereafter the rates for bachelors, widowers, spinsters and widows respectively. The

departure from the usual custom of widening the range of observations by including the three years about the census date instead of the single census year calls perhaps for explanation, but the reasons are more or less self-evident. The aggregation and averaging of three years' records is mainly directed towards removing or reducing the small oscillations in a continuous record of single year observations and also the accidental variations in the rates which might result from the paucity of data at the extreme ages of the several experiences; it

Table LX.—England and Wales, 1921.—Annual Marriage-rate per 1,000 Bachelors, Widowers, Spinsters and Widows respectively at each of several age periods.

Age.	Bachelors and Widowers.	Spinsters and Widows.	Bachelors.	Widowers.	Spinsters.	Widows.
15— ..	—	0·1	—	—	0·1	—
16— ..	0·0	0·7	0·0	—	0·7	—
17— ..	0·5	5·0	0·5	—	5·0	—
18— ..	3·8	22·6	3·8	—	22·6	—
19— ..	13·4	48·3	13·4	37·0	48·3	71·4
20— ..	33·0	73·8	33·0	59·5	73·8	69·3
21— ..	114·5	127·8	114·4	169·8	127·4	197·4
25— ..	175·4	123·0	174·7	235·5	121·3	155·1
30— ..	138·4	69·5	134·0	226·2	64·3	101·8
35— ..	87·2	39·3	76·8	184·4	32·4	65·1
40— ..	56·9	23·1	42·7	134·1	17·4	38·3
45— ..	39·9	15·6	24·2	91·3	11·0	24·0
50— ..	29·8	9·3	13·9	60·0	6·4	12·6
55— ..	23·6	5·7	8·9	40·7	3·7	7·2
60— ..	17·0	3·2	5·2	25·5	2·2	3·7
65— ..	10·6	1·8	3·5	13·7	1·1	2·0
70 and over.	3·8	0·5	1·1	4·4	0·3	0·5
All ages over 15 years.	60·4	45·8	62·5	44·6	54·2	18·0

can only be justified where the essential rates themselves are stationary during the period or are moving in such a manner that the averages are not fundamentally different from the rates of the single year; at the present time these conditions are not fulfilled, for reasons already declared the 1920 rates were abnormally high, and the drop from 1920 to 1921 was heavier than the similar movement over the whole of several decades prior to the war; the decline in the past year, 1921 to 1922, was also large in comparison with pre-war changes, though only about one-third of that of the previous year, and it has again been followed by a

still smaller decline between 1922 and 1923. The whole history of recent years is one of violent change, which it would be impossible to portray except by separating the statistics of consecutive years and this course has been followed as far as possible in the tables appearing in this Report. So far as can be seen at present, the abnormal yearly movement in the age rates is diminishing and a stationary condition is being approached stabilising the rates at appreciably different levels from those which have prevailed hitherto.

The incidence of marriage is shown for the several sections of the present population in its completest form in Table LX and the characteristic differences between the sexes as a whole and between the single and widowed of each sex separately are both well displayed in that table. For males, marriage appears to begin to be significant at about the age of 18, from which the rate rises sharply to a maximum of about 175 per 1,000 which is attained soon after the age of 25 and then descends, rapidly at first, the maximum value being halved about 10 years later, and thereafter with decreasing rapidity to 10·6 per 1,000 for the age period 65–70 and 3·8 per 1,000 for ages over 70. For females, as might be expected, marriage is even more markedly located at the earlier ages ; notwithstanding the excess of marriageable females, the rates at each age are considerably higher than the corresponding rates for males up to the point at which the female maximum of about 128 per thousand is reached ; this is rather before the age of 25 and thereafter the declining rates are far lower throughout the table, diminishing to 9·3 per 1,000 for the age period 50–55, 3·2 per 1,000 ten years later, and 0·5 per thousand for ages over 70.

Remarriages continue to be much more frequent than first marriages in equivalent sections either of the male or female population. At every age period where the data are sufficient to provide reliable comparisons, the rates for widowers or widows are higher than those for the single, but much more so in the case of males. For each sex the single and widowed maxima occur at approximately the same ages, but the peaks of the curves are not so pronounced and the descent from the peak values is more gradual in the case of the widowed, the values at the later ages being as much as four or more times the corresponding values for the single males and roughly twice those for single females. It is interesting to compare these relations with those suggested by the rates per 1,000 of each marital condition of all ages ; owing to the concentration of the single at the younger ages where marriages are numerous and the widowed at the later ages where they are few, the male aggregate rate for the single is about 40 per cent. above that of the widowed, and in the case of females it is 200 per cent. in excess, more misleading guides as integral expressions of the relative incidence of marriage it would be difficult to find.

Table LXI enables the present frequencies of marriage at several age groups to be compared with those of past periods.

Table LXI.—England and Wales. Annual Marriage-rate per 1,000 Bachelors, Widowers, Spinsters, and Widows respectively at each of several Age Periods, 1871–1922.

NOTE.—The annual numbers of marriages have been taken as the average of the three years about each Census prior to 1921. During the 1921 period, the marriage rates have been changing rapidly and it has been deemed preferable to show the rates for the years 1920, 1921 and 1922 separately, the marriages of each of these years being expressed per 1,000 of the Census population in the case of bachelors, widowers and spinsters and in the case of widows per 1,000 population modified in 1920 and 1922 to allow approximately for the changes in the numbers of widows during the three years.

Year.	Annual marriage-rate per 1,000 in each age group.						Marriage rate per 1,000 population over 15 in each class.	Ratio to corresponding rate for 1921	Marriage rate which would have resulted had the 1921 age rates been in operation.	Ratio of actual marriage rate (Col. 8) to rate in previous column (10).
	15—	20—	25—	35—	45—	55 and over.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					BACHELORS.					
1871	6·0	122·4	119·3	43·3	15·3	3·2	61·7	987	62·3	990
1881	4·6	106·8	112·4	40·5	14·3	3·0	55·7	891	62·4	893
1891	3·1	94·7	122·4	43·4	15·2	3·5	54·8	877	63·8	859
1901	2·5	85·9	123·7	44·2	14·6	3·3	54·7	875	66·6	821
1911	2·2	74·8	120·6	44·4	14·9	3·9	52·6	842	69·2	760
1920	4·0	110·2	191·4	73·6	22·9	5·8	73·8	1,181	—	—
1921	3·4	94·4	161·1	61·6	19·7	5·5	62·5	1,000	62·5	1,000
1922	3·0	87·4	152·4	57·4	19·0	5·4	58·6	938	—	—
					WIDOWERS.					
1871	11·5	229·0	288·5	181·5	88·3	15·9	65·8	1,475	56·0	1,175
1881	30·6	192·9	246·5	157·8	76·9	16·0	58·2	1,305	56·0	1,039
1891	14·1	153·4	231·7	151·1	74·7	15·5	53·4	1,197	53·7	994
1901	—	132·6	201·7	134·1	65·3	13·5	44·4	996	51·0	871
1911	—	121·6	171·2	117·9	59·4	12·7	36·9	827	47·4	778
1920	—	231·8	314·1	195·4	88·7	17·8	55·0	1,233	—	—
1921	14·3	163·7	229·3	155·2	73·5	15·8	44·6	1,000	44·6	1,000
1922	—	146·0	199·3	138·9	66·6	14·7	40·2	901	—	—
					SPINSTERS.					
1871	26·8	133·7	85·9	30·4	11·9	1·7	63·1	1,164	55·8	1,131
1881	21·5	121·9	80·6	26·3	10·4	1·6	56·9	1,050	55·8	1,020
1891	16·2	112·4	85·7	26·4	10·3	1·7	54·4	1,004	57·1	953
1901	12·9	104·9	88·6	25·3	9·1	1·5	53·0	978	58·6	904
1911	11·2	97·7	91·1	24·4	8·5	1·8	50·6	934	58·0	872
1920	16·0	134·1	117·3	30·3	10·2	2·1	63·1	1,164	—	—
1921	14·8	114·4	100·0	25·6	8·9	2·0	54·2	1,000	54·2	1,000
1922	13·3	107·2	96·9	24·1	8·3	1·8	51·2	945	—	—
					WIDOWS.					
1871	55·4	170·5	125·5	55·7	20·8	2·6	21·1	1,172	19·6	1,077
1881	56·6	155·3	114·5	50·2	18·6	2·6	18·2	1,011	18·5	984
1891	49·3	150·4	114·3	50·3	17·8	2·4	16·3	906	16·8	970
1901	54·9	140·7	115·9	48·9	15·6	2·1	14·4	800	15·6	923
1911	30·0	151·2	114·1	48·9	15·6	2·1	12·5	694	13·6	919
1920	62·9	322·6	159·7	59·1	20·7	2·9	24·3	1,350	—	—
1921	36·1	191·4	120·3	50·6	17·6	2·5	18·0	1,000	18·0	1,000
1922	24·8	124·4	99·0	46·4	16·4	2·3	14·9	828	—	—

Up to 1911 the rates had on the whole been steadily declining during several decades for all classes, the fall being greatest among widowers and least among widows with the exception perhaps of the older bachelors where the movement, though a little irregular, was generally slight and indicative of a stationary condition and of spinsters in the age period 25—35 whose marriage-rate had for some years shown an upward tendency.

In the present period, taking the 1921 experience as roughly representative of the time, the rates at every age group show marked increases over those of 10 years ago and in many cases are higher than have been experienced for 30 or 40 years. Females whose numbers at adult ages have been less disturbed by the events of the past years than the males, naturally show the smaller rise ; above the age of 35 it has been least of all, and has by now almost entirely disappeared, while below that age the marked initial increase seems to be persisting longer amongst spinsters, at the expense of the widows whose rates are now much lower than in any of the earlier years shown in the table. The increases in the male rates have been more evenly spread over the several age groups and show evidence of longer duration than those of females, the 1922 rates being everywhere appreciably above those of 1911. This apparent change of habit in regard to marriages in the case of men seems to be a feature of the post war years, but it is not confined to men of military age ; the age groups both below 25 and over 45 all show large relative increases, and, coming as they do at a time of chronic unemployment and restricted housing conditions, appear to imply some departure from the conventional standards which governed marriages as recent as those of even 10 years ago.

Indexes of the changes in each class are given in the last four columns of Table LXI. Columns 8 and 9 show the rate per 1,000 population of all ages over 15 and the ratio of each rate to that of 1921 which is adopted as the standard. These comparisons, however, make no allowance for any change in the age constitution of the population exposed to risk, and a method of standardisation has therefore been adopted in columns 10 and 11, a series of index figures being given in the latter column from which the variation due to this cause has been eliminated. From these it will be seen that the bachelor, widower, spinster and widow rates for 1922 are lower by about 6, 10, 5½ and 5 per cent. than the 1921 rates, but still are greater than the corresponding rates for 1911 by 23 (i.e., $\frac{938-760}{760}$) 16, 8 and 3 per cent. respectively.

First Marriages and Remarriages. — The relative proportions and changes in the proportions of first marriages and remarriages have necessarily been dealt with in the age and condition analysis provided by the new Census data. The following table, however, is included here in a shortened form in continuation of the similar

tables which have appeared in previous issues of this Report, the years shown being those in which the basic populations have been sufficiently similar to provide comparable figures.

Table LXII.—England and Wales, 1918–1922: Proportions of First Marriages and Remarriages in 1,000 Marriages.

Year.	Men.		Women.		Bachelors who married.		Widowers who married.	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1918 ..	901	99	894	106	837	64	57	42
1919 ..	897	103	875	125	816	81	59	44
1920 ..	907	93	894	106	839	68	55	38
1921 ..	911	89	909	91	855	56	54	35
1922 ..	913	87	920	80	866	47	54	33

Age at Marriage.—The following tables similarly continue the series classifying the marriages of the year by age, Table LXIII, showing the mean ages of the persons married in each of the possible combinations and Table LXIV extending the analysis into a number of age groups.

Table LXIII.—England and Wales: Mean Ages at Marriage, 1896–1922.

Males.

Year.	All Bridegrooms.	All Bachelor Bridegrooms.	All Widower Bridegrooms.	Bachelors with Spinsters.	Bachelors with Widows.	Widowers with Spinsters.	Widowers with Widows.
1896–1900	28·38	26·63	44·73	26·35	34·12	41·74	49·72
1901–05	28·52	26·90	45·08	26·62	34·09	42·28	49·88
1906–10 ..	28·76	27·19	45·71	26·93	34·70	42·95	50·64
1911–15	29·01	27·49	46·62	27·18	35·73	43·80	51·37
1916–20	29·77	27·92	46·84	27·42	34·78	44·42	50·25
1911 ..	29·03	27·46	46·42	27·19	35·19	43·49	51·46
1912 ..	29·12	27·56	46·77	27·27	35·75	43·96	51·67
1913 ..	29·11	27·56	46·65	27·25	35·68	43·91	51·35
1914 ..	28·94	27·40	46·66	27·05	35·90	43·79	51·39
1915 ..	28·87	27·49	46·61	27·12	36·15	43·86	50·98
1916 ..	29·70	27·93	47·32	27·47	36·20	44·79	51·07
1917 ..	30·04	28·04	47·71	27·52	35·63	45·22	51·23
1918 ..	30·08	28·14	47·74	27·59	35·43	45·38	50·88
1919 ..	29·81	27·99	45·72	27·46	33·36	43·40	48·85
1920 ..	29·20	27·51	45·73	27·04	33·28	43·31	49·24
1921 ..	29·19	27·48	46·60	27·03	34·35	44·06	50·57
1922 ..	29·21	27·54	46·91	27·12	35·24	44·31	51·20

Females.

Year.	All Brides.	All Spinster Brides.	All Widow Brides.	Spinsters with Bachelors.	Spinsters with Widowers.	Widows with Bachelors.	Widows with Widowers.
1896–1900	26·21	25·14	40·70	24·62	32·64	35·96	44·99
1901–05	26·36	25·37	40·37	24·88	32·99	35·76	45·09
1906–10	26·59	25·63	41·06	25·14	33·63	36·51	45·82
1911–15	26·77	25·75	41·65	25·27	34·23	37·40	46·57
1916–20	27·14	25·81	38·66	25·24	34·30	34·73	44·74
1911 ..	26·80	25·81	41·74	25·32	34·13	37·01	46·63
1912 ..	26·84	25·85	41·89	25·36	34·25	37·44	46·69
1913 ..	26·80	25·78	41·57	25·29	34·23	37·22	46·59
1914 ..	26·68	25·61	41·64	25·12	34·28	37·53	46·57
1915 ..	26·75	25·71	41·42	25·28	34·28	37·78	46·39
1916 ..	27·17	25·91	40·73	25·36	34·58	36·79	45·85
1917 ..	27·27	25·89	39·66	25·28	34·54	35·40	45·48
1918 ..	27·29	25·92	38·84	25·33	34·59	34·82	44·86
1919 ..	27·16	25·81	36·69	25·24	33·77	33·07	43·36
1920 ..	26·79	25·54	37·36	24·99	34·02	33·56	44·14
1921 ..	26·73	25·52	38·83	24·95	34·40	34·83	45·26
1922 ..	26·71	25·57	39·93	25·02	34·53	35·81	45·87

Table LXIV.—England and Wales, 1886–1922: Marriages of Bachelors, Spinsters, Widowers and Widows at Various Ages per 1,000 Marriages at All Ages.

Period.	All Ages.	Under 18 Years.	18–	19–	20–	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55 and up.	Age not Stated.
						Bachelors.									
1886–90..	1,000	0	4	20	47	71	424	309	96	33	13	6	3	2	43
1891–95..	1,000	0	3	17	43	63	415	333	108	37	14	6	3	2	19
1896–1900	1,000	0	3	15	39	57	411	346	110	39	15	6	3	2	11
1901–05..	1,000	0	3	13	35	51	390	360	122	41	16	7	3	2	8
1906–10..	1,000	0	3	11	30	44	370	372	132	46	17	8	3	2	6
1911–15..	1,000	0	3	12	28	43	350	373	139	53	21	9	4	3	5
1916–20..	1,000	1	6	13	27	47	332	354	144	62	30	15	6	4	6
1911 ..	1,000	0	3	11	28	42	350	380	139	50	19	9	3	3	5
1912 ..	1,000	0	3	11	28	42	347	378	140	52	20	9	4	3	5
1913 ..	1,000	0	3	12	30	45	348	372	141	53	21	9	4	3	4
1914 ..	1,000	0	3	13	29	45	350	367	139	54	23	10	4	3	5
1915 ..	1,000	0	2	10	25	37	353	370	138	57	23	10	4	3	5
1916 ..	1,000	1	4	11	24	40	335	355	144	65	31	14	6	4	6
1917 ..	1,000	2	7	13	25	47	329	350	143	64	33	17	7	4	6
1918 ..	1,000	2	8	13	25	48	324	351	141	63	33	20	8	5	7
1919 ..	1,000	1	6	14	28	49	320	353	151	66	30	14	6	4	7
1920 ..	1,000	1	4	15	32	52	347	356	138	56	24	12	5	4	6
1921 ..	1,000	1	4	15	33	53	350	356	136	55	24	12	5	4	5
1922 ..	1,000	1	4	14	30	49	349	361	136	54	24	12	5	5	5

Table LXIV.—England and Wales, 1886–1922: Marriages of Bachelors, Spinsters, Widowers and Widows at Various Ages per 1,000 Marriages at All Ages—*continued.*

Period.	All Ages.	Under 18 Years.	18–	19–	20–	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55 and up.	Age not Stated.
						Spinsters.									
1886–90..	1,000	9	37	72	97	215	417	219	62	23	10	5	2	1	46
1891–95..	1,000	7	31	66	94	198	425	241	70	25	11	5	2	1	22
1896–1900	1,000	6	27	59	89	181	434	253	74	26	11	5	2	1	13
1901–05..	1,000	5	23	53	82	163	428	272	79	28	12	5	2	1	10
1906–10..	1,000	5	21	48	75	149	420	284	87	30	12	6	2	2	8
1911–15..	1,000	6	23	47	70	146	402	292	94	34	14	7	3	2	6
1916–20..	1,000	6	23	48	72	149	402	275	94	39	17	9	4	3	8
1911 ..	1,000	5	21	46	70	142	404	298	93	32	13	7	3	2	6
1912 ..	1,000	5	22	47	71	145	399	295	95	34	14	7	3	2	6
1913 ..	1,000	5	25	50	72	152	397	290	95	34	14	7	3	2	6
1914 ..	1,000	7	25	50	71	153	399	286	95	35	14	7	3	2	6
1915 ..	1,000	5	21	45	68	139	407	291	95	36	14	7	3	2	6
1916 ..	1,000	5	21	46	68	140	402	278	100	41	18	9	3	2	7
1917 ..	1,000	6	22	48	72	148	400	273	95	41	19	9	4	3	8
1918 ..	1,000	5	22	45	72	144	404	274	93	40	19	10	4	3	9
1919 ..	1,000	5	22	49	71	147	403	277	95	38	17	9	4	2	8
1920 ..	1,000	6	25	52	77	160	407	276	87	34	15	8	3	3	7
1921 ..	1,000	7	27	54	76	164	406	274	86	33	15	8	4	3	7
1922 ..	1,000	7	26	51	73	157	404	282	88	33	15	8	3	3	7

Period.	All Ages.	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70 and up.	Age not Stated.
						Widowers.								
1886–90..	1,000	0	13	81	133	151	139	120	94	70	53	27	15	104
1891–95..	1,000	0	12	76	132	153	148	126	106	74	55	29	18	71
1896–1900	1,000	0	10	73	131	158	150	136	109	84	56	30	19	44
1901–05..	1,000	0	10	68	130	155	152	136	116	83	62	32	20	36
1906–10..	1,000	0	8	61	123	153	152	141	119	90	62	37	24	30
1911–15..	1,000	0	7	53	109	151	150	146	125	97	68	41	30	23
1916–20..	1,000	0	7	54	105	138	151	155	130	101	70	39	26	24
1911 ..	1,000	0	7	56	115	155	146	144	119	93	68	40	33	24
1912 ..	1,000	0	7	55	108	150	145	142	125	99	68	45	33	23
1913 ..	1,000	0	8	51	109	149	150	145	125	97	69	42	30	25
1914 ..	1,000	0	7	52	108	148	152	145	126	97	70	40	31	24
1915 ..	1,000	0	6	50	105	149	155	154	129	98	68	39	26	21
1916 ..	1,000	0	6	43	94	130	162	163	133	105	73	40	29	22
1917 ..	1,000	0	6	43	86	125	152	167	141	107	79	42	27	25
1918 ..	1,000	0	5	44	84	123	149	173	145	108	74	43	26	26
1919 ..	1,000	0	8	62	122	154	151	144	121	92	63	35	24	24
1920 ..	1,000	0	10	69	128	148	141	134	118	97	66	39	25	25
1921 ..	1,000	0	8	61	116	142	143	138	120	99	73	46	31	23
1922 ..	1,000	0	8	55	115	142	138	139	121	102	74	48	34	24
						Widows.								
1886–90..	1,000	1	30	119	164	173	145	117	73	46	26	10	3	93
1891–95..	1,000	1	27	115	170	177	157	119	78	47	29	10	4	66
1896–1900	1,000	1	26	113	175	188	157	127	81	50	28	11	3	40
1901–05..	1,000	1	28	122	182	190	158	118	78	47	29	11	4	32
1906–10..	1,000	1	23	106	177	192	160	129	82	52	30	14	6	28
1911–15..	1,000	1	21	98	167	193	171	135	85	51	32	16	11	19
1916–20..	1,000	3	67	189	191	162	126	98	64	41	24	13	6	16
1911 ..	1,000	0	22	102	164	192	166	135	82	54	32	17	13	21
1912 ..	1,000	1	19	95	166	195	166	134	87	54	34	17	12	20
1913 ..	1,000	1	21	102	170	195	164	133	82	53	32	16	11	20
1914 ..	1,000	1	20	93	170	196	176	133	84	51	31	15	11	19
1915 ..	1,000	1	22	98	165	194	180	137	87	47	30	15	8	16
1916 ..	1,000	3	41	119	161	183	166	127	84	50	26	16	8	16
1917 ..	1,000	3	64	149	164	167	145	116	76	50	27	15	7	17
1918 ..	1,000	3	74	173	172	158	132	108	72	44	27	13	7	17
1919 ..	1,000	4	86	228	204	156	106	81	52	34	19	10	5	15
1920 ..	1,000	2	59	221	221	159	109	82	53	37	22	13	6	16
1921 ..	1,000	1	37	179	222	178	122	93	62	42	25	15	8	16
1922 ..	1,000	1	25	148	212	185	135	102	72	49	29	16	8	18

Marriages of Minors.—In common with the experience of adults, the rapid rise in the marriage-rate of minors has given place to a relatively heavy decline, the position in the present year corresponding roughly to that of 20 years ago. Females who have always greatly outnumbered the males in this class—in a ratio of about 3 to 1—naturally show the highest rates and the greatest changes in the rate; they formed 18·8 per 1,000 of the unmarried females aged 15–21 in 1911, were 26·6 in 1920, and are now 21·2, while the corresponding rates for males were 5·5, 8·8 and 6·6 per 1,000 respectively.

Comparative figures are not shown in the following table for years earlier than 1901, on account of the fact that population returns before that date were classified by quinquennial groups without regard for the age point 21. For earlier periods back to 1871 reference may be made to the general age analyses, Table LXI, in which, with the aid of the additional information given in Table LXV, the present early marriage-rates may be contrasted with the much higher rates operating 50 years ago, and a brief history of the intervening years obtained.

The number of males and females marrying under age and also at six other groups of ages, with distinction of the marital

Table LXV.—England and Wales: Annual Marriage-rate per 1,000 Unmarried and Widowed Persons in the age group 15–21 at each period 1901 to 1922.

Year.	Males.		Females.	
	Rate.	Ratio to 1921.	Rate.	Ratio to 1921.
1901	6·7	870	21·6	923
1911	5·5	714	18·8	803
1920	8·8	1,143	26·6	1,137
1921	7·7	1,000	23·4	1,000
1922	6·6	857	21·2	906

Table LXVI.—England and Wales, 1876–1922: Minors Married per 1,000 Marriages at all Ages.

	Husbands.	Wives.		Husbands.	Wives.
1876–80 ..	77·8	217·0	1913 ..	42·1	143·8
1881–85 ..	73·0	215·0	1914 ..	41·6	142·5
1886–90 ..	63·2	200·2	1915 ..	34·8	129·8
1891–95 ..	56·2	182·6	1916 ..	36·2	129·1
1896–1900 ..	51·2	168·0	1917 ..	41·7	134·2
1901–05 ..	46·3	153·1	1918 ..	42·6	129·0
1906–10 ..	40·3	139·4	1919 ..	43·7	129·4
1911–15 ..	39·2	136·6	1920 ..	46·8	142·9
1916–20 ..	42·6	133·3	1921 ..	48·2	149·2
1912 ..	39·2	135·4	1922 ..	44·4	144·4

condition of the parties, is shown for each registration county in Table N, on page 73 of Part II. From these figures and those of Tables LXVII and LXX below, it appears that local customs with regard to early marriage are little changed from those indicated by pre-war returns. It will be seen from Table LXVII that each of the four geographical sections* into which the country has been divided for the purpose of this Report occupies the same relative position in 1921 as it did in 1911; for both males and females the rates are highest in the North and lowest in the South, with the exception of the females of Wales, whose rates are higher than those shown in respect of either of the other sections; Welsh males on the other hand occupy a position between the males of the Midlands and the South. In individual counties the highest proportions of persons marrying under age are found, generally speaking, in mining and industrial areas.

Table LXVII.—England and Wales. Marriage-rate of Minors per 1,000 Marriageable Population aged 15–21 in Geographical Sections of the Country, 1911 and 1921.

	Males.				Females.			
	Rate.		Ratio 1921 to 1911.	Ratio of local rate to England and Wales rate 1921.	Rate.		Ratio 1921 to 1911.	Ratio of local rate to England and Wales rate 1921.
	1911.	1921.			1911.	1921.		
England and Wales.	5·5	7·7	1,400	1,000	18·8	23·4	1,245	1,000
North	6·7	9·3	1,388	1,208	21·7	26·1	1,203	1,115
Midlands ..	5·7	7·5	1,316	974	18·0	22·1	1,228	944
South ..	4·0	6·1	1,525	792	15·4	20·8	1,351	889
Wales ..	4·8	6·7	1,396	870	22·3	26·7	1,197	1,141

The 1921 ratio per 1,000 marriageable population between 15 and 21 is greatest in Durham where it is 61 per cent. in excess of that for the whole country, followed by Nottingham, Glamorgan, Yorks East Riding, and the somewhat exceptional agricultural county of Lincoln. On the other hand, in residential and agricultural counties, the figures are normally well below the mean, the lowest generally being those recorded for the southern counties of England and the northern counties in Wales.

Fluctuations of the general Marriage-rate in different Sections of the Country.—Comparison between the 1911 and 1921 general

* The composition of the four sections is shown on page 13.

marriage-rates in the four geographical sections of the country referred to on the previous page is made in Table LXVIII, and an analysis of recent rates in Registration Counties is shown in Table LXX. The determination of marriage-rates for localities is not wholly satisfactory for several reasons. In a large proportion of cases the district of registration is the district of residence of only one of the parties and in some cases of neither. This difficulty, however, is probably of less moment in comparisons between large sections of the country than between smaller adjacent localities. Again, it has only been possible till now to tabulate marriages by registration areas, while the available estimates of population for years other than Census years refer to administrative areas. The populations upon which the rates for such years are based have, therefore, to be derived from the estimated populations of the corresponding aggregates of administrative counties and county boroughs on the assumption of a ratio between the population of the registration and administrative areas. Any error so introduced is, however, probably small and not likely to have any appreciable effect upon the rates quoted.

As with the Marriages under full age the incidence of the general marriage-rate of 1921 in the several geographical sections is little different from that of 1911. The most curious feature is perhaps the contrast between males and females of Wales: the rate for the latter is higher than any of the English sections, whereas for males it is nearly 20 per cent. lower, a gap which is even wider than it was 10 years ago. The only actual change in position shown in the table is between the north and south male rates, the latter being now slightly in excess, but the difference between them or in fact any of the English sections is very small in the case of males.

Table LXVIII.—England and Wales: Marriage-rate per 1,000 Marriageable Population aged 15 and over in Geographical Sections of the Country, 1911 and 1921.

	Males.				Females.			
	Rate.		Ratio 1921 to 1911.	Ratio of local rate to England and Wales rate 1921.	Rate.		Ratio 1921 to 1911.	Ratio of local rate to England and Wales rate 1921.
	1911.	1921.			1911.	1921.		
England and Wales.	50·8	60·4	1,189	1,000	42·5	45·8	1,078	1,000
North ..	52·1	61·6	1,182	1,020	44·9	48·7	1,085	1,063
Midlands ..	51·1	60·1	1,176	995	43·0	46·1	1,072	1,007
South ..	51·3	62·2	1,212	1,030	38·8	41·8	1,077	913
Wales ..	42·8	49·5	1,157	820	47·9	49·5	1,033	1,081

Table LXIX.—England and Wales, 1914–1922 : Marriages and Marriage-rates of each year in Geographical Sections of the Country.

	North.	Midlands.	South.	Wales.	England and Wales.
	Numbers of Marriages Registered.				
1914 ..	100,926	87,695	85,728	20,052	294,401
1915 ..	115,694	109,844	113,868	21,479	360,885
1916 ..	90,287	84,895	87,322	17,342	279,846
1917 ..	83,151	78,761	80,356	16,587	258,855
1918 ..	92,381	87,798	89,928	17,056	287,163
1919 ..	125,863	111,180	107,971	24,397	369,411
1920 ..	136,443	114,942	102,930	25,667	379,982
1921 ..	110,864	97,218	91,831	20,939	320,852
1922 ..	101,335	91,657	86,610	19,922	299,524

	Persons Married per 1,000 Population.								
	Marriage-rate.					Rate per cent. of that in England and Wales.			
	North.	Midlands.	South.	Wales.	England and Wales.	North	Midlands.	South.	Wales.
1914 ..	16·30	15·25	16·29	15·76	15·93	102·3	95·7	102·3	98·9
1915 ..	18·33	18·79	21·95	16·66	19·37	94·6	97·0	113·3	86·0
1916 ..	14·19	14·45	16·69	13·36	14·87	95·4	97·2	112·2	89·8
1917 ..	13·02	13·30	15·62	12·39	13·78	94·5	96·5	113·4	89·9
1918 ..	14·55	14·84	17·39	12·96	15·31	95·0	96·9	113·6	84·7
1919 ..	19·85	18·91	20·80	18·25	19·71	100·7	95·9	105·5	92·6
1920 ..	21·58	19·56	19·66	19·37	20·20	106·8	96·8	97·3	95·9
1921 ..	17·36	16·37	17·39	15·63	16·94	102·5	96·6	102·7	92·3
1922 ..	15·76	15·31	16·32	14·70	15·70	100·4	97·5	103·9	93·6

Table LXX gives the marriage-rate per 1,000 marriageable population in each registration county in 1921, and the ratio between the local rate and that of the whole country ; in adjacent columns are shown the crude rates per 1,000 total population for 1921 and 1922.

Table LXX.—England and Wales. Marriage-rate—all marriages and marriages of minors separately—in Registration Counties, 1921 and 1922.

Registration County.	All Marriages.				Minors.			
	Persons married per 1,000 marriageable population of the age of 15 and over.	Ratio to England and Wales rate.	Persons married per 1,000 total population.		Persons married per 1,000 marriageable population 15–21.	Ratio to England and Wales rate.	Persons married per 1,000 total persons married.	
	1921	1921	1921	1922	1921	1921	1921	1922
England and Wales ..	52·1	1,000	16·9	15·7	15·6	1,000	98·7	94·4
London	56·4	1,083	19·4	18·3	15·5	994	83·4	78·9
Surrey	43·9	843	15·4	14·2	10·4	667	70·2	72·0
Kent	45·9	881	15·5	14·4	13·5	865	93·8	90·6
Sussex	39·4	756	15·3	14·1	11·5	737	78·2	78·5
Hampshire	48·5	931	16·5	15·5	13·7	878	88·1	93·8
Berkshire	46·1	885	15·7	14·2	11·8	756	79·8	74·6
Middlesex	50·2	964	16·1	15·2	11·8	756	76·9	73·6
Hertfordshire	44·7	858	15·2	14·9	12·2	782	85·5	77·3
Buckinghamshire ..	45·2	868	15·2	14·9	10·5	673	76·6	81·9
Oxfordshire	44·8	860	16·0	15·4	10·8	692	70·7	77·9
Northamptonshire ..	53·7	1,031	17·1	16·6	14·2	910	87·6	75·7
Huntingdonshire ..	54·9	1,054	17·4	14·3	18·0	1,154	106·2	88·1
Bedfordshire	50·7	973	16·6	15·4	14·2	910	90·9	89·6
Cambridgeshire	49·6	952	16·6	15·5	15·6	1,000	99·9	91·7
Essex	53·5	1,027	16·8	15·9	12·3	788	80·6	81·3
Suffolk	48·7	935	15·9	13·7	14·7	942	98·5	86·9
Norfolk	49·6	952	16·1	15·2	14·3	917	91·8	91·0
Wiltshire	50·8	975	16·8	15·6	12·2	782	79·2	77·0
Dorsetshire	46·0	883	16·2	14·9	11·8	756	77·6	95·4
Devonshire	46·7	896	16·7	16·0	13·1	840	81·6	79·0
Cornwall	41·5	797	14·8	14·6	11·9	763	82·5	82·7
Somersetshire	46·0	883	16·4	15·0	11·0	705	69·8	61·8
Gloucestershire	49·8	956	16·7	15·7	11·0	705	70·7	67·8
Herefordshire	42·7	820	15·1	14·3	8·5	545	58·2	89·6
Shropshire	45·7	877	15·7	14·1	10·7	686	74·3	80·9
Staffordshire	57·0	1,094	16·5	14·7	17·9	1,147	121·2	115·5
Worcestershire	49·2	944	15·7	15·2	13·6	872	94·9	90·5
Warwickshire	50·7	973	15·4	14·7	14·0	897	96·6	87·8
Leicestershire	58·9	1,131	18·4	17·4	17·5	1,122	102·8	96·0
Rutlandshire	39·4	756	13·7	14·6	6·2	397	54·3	76·1
Lincolnshire	54·3	1,042	16·5	14·6	19·4	1,244	122·3	127·0
Nottinghamshire ..	58·0	1,113	17·2	16·6	22·4	1,436	139·7	132·6
Derbyshire	56·9	1,092	16·6	15·3	18·2	1,167	119·4	118·7
Cheshire	48·3	927	16·1	14·7	13·2	846	86·5	83·0
Lancashire	54·1	1,038	17·8	16·2	15·0	962	90·4	84·5
Yorkshire—								
West Riding	56·3	1,081	17·4	16·4	19·1	1,224	115·4	109·8
East Riding (with York)	56·1	1,077	18·1	15·1	19·7	1,263	117·8	111·0
North Riding	47·3	908	15·8	14·4	18·5	1,186	128·3	120·6
Durham	60·7	1,165	17·2	14·9	25·1	1,609	165·1	160·3
Northumberland	52·7	1,012	16·9	15·2	19·3	1,237	130·2	125·7
Cumberland	46·9	900	16·3	14·3	17·3	1,109	115·5	106·1
Westmorland	43·4	833	17·7	14·8	10·7	686	69·6	75·3
Monmouthshire ..	53·8	1,033	15·1	14·5	18·5	1,186	136·6	132·7
Glamorganshire	56·6	1,086	16·4	15·4	19·8	1,269	132·7	124·3
Carmarthenshire	46·5	893	15·3	14·9	15·8	1,013	112·7	97·8
Pembrokeshire	43·3	831	15·0	13·5	12·2	782	86·6	86·2
Cardiganshire	29·6	568	13·4	12·7	5·7	365	45·6	53·5
Brecknockshire	46·0	883	15·8	13·7	11·8	756	83·9	111·9
Radnorshire	36·0	691	14·8	15·7	8·7	558	65·6	76·3
Montgomeryshire ..	38·9	747	14·2	14·3	8·7	558	63·5	57·4
Flintshire	40·8	783	14·4	12·1	8·5	545	66·2	62·5
Denbighshire	43·1	827	15·1	14·5	11·2	718	81·7	65·2
Merionethshire	34·4	660	14·6	14·8	6·9	442	51·4	59·8
Carnarvonshire	36·9	708	15·2	13·6	8·2	526	58·1	54·0
Anglesey	33·4	641	12·3	11·8	7·4	474	61·9	43·4

Buildings in which Marriages may be Solemnized.—At the end of the year 1922 the numbers of churches or chapels of the Established Church and of registered buildings in which marriages could be legally solemnized were as follows :—

Established Church	16,192
All other religious denominations ..	18,325
Total	34,517

The increase upon the numbers at the end of the previous year was :—Established Church 36, other religious denominations 220. The number of these buildings belonging to the various denominations is shown for each registration county in Table Q.

By the Acts 15 and 16 Vict. c. 36, and 18 and 19 Vict. c. 81, it was enacted that all places of religious worship not being churches or chapels of the Established Church, should, if the congregations desired, be certified to the Registrar-General, certification for public worship being a necessary preliminary to the registration of a building for the solemnization of marriages.

The number of places of meeting for religious worship on the official register on 31st December, 1922, and the number of buildings registered for the solemnization of marriages are shown in the following table :—

Table LXXI.

Denomination.	Buildings certified to the Registrar-General as meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*
Roman Catholics	1,581	1,508
Wesleyan Methodists	7,642	4,341
Congregationalists	3,382	3,074
Baptists	3,200	2,837
Primitive Methodists	4,370	2,026
United Methodist Church	1,980	1,269
Calvinistic Methodists	1,307	1,018
Presbyterians	447	451
Unitarians	183	198
New Church	55	60
Catholic Apostolic Church	70	48
Countess of Huntingdon's Connexion	47	42
Salvation Army	1,152	205
Society of Friends	432	†
Jews	261	†
Other Denominations	3,410	1,248
All Denominations	29,519	18,325

* Of these buildings nearly 1,000 were certified before 1852, as Places of Meeting for Religious Worship, to some other Authority than the Registrar-General and therefore are not included in the preceding column.

† It is not necessary for buildings to be registered for the solemnization of Quaker or Jewish marriages. Under section 31 of the Births, Deaths, and Marriages Registration Act (1836) Registering Officers of the Society of Friends and Secretaries of Jewish Synagogues who have been certified to the Registrar-General record the marriages in each case.

The Marriage Act, 1898, provided that under specified conditions marriages might be solemnized in registered buildings in the presence of duly authorised persons without the attendance of a Registrar of Marriages. The governing bodies of some of the registered buildings have availed themselves of this provision, and at the end of the year 1922, the number of such buildings which had been brought under the operation of the Act, and so remained, was 4,977, out of the total of 18,325. The numbers of these buildings, and the denominations to which they belonged, were as follows :—

2,064 Wesleyan Methodists.
727 Congregationalists.
777 Primitive Methodists.
508 Baptists.
445 United Methodist Church.
121 Calvinistic Methodists.
335 Other Denominations and Unsectarian.

4,977 All Denominations.

Divorces and Remarriages of Divorced Persons. — The annual numbers of marriages dissolved or annulled are shown in Table LXXII for each of the past twelve years and the seven preceding quinquennia.

During the year 1922, 2,509 divorces and 79 annulments were obtained, the number of persons involved being twice these figures, or a total of 2,588 of each sex. The total, though very high in comparison with any period prior to 1920, is 27 per cent.

Table LXXII.—England and Wales : Annual Number of Persons Divorced, and of Divorced Persons who Remarried, 1876–1922.

Period.	Number of Persons Divorced.	Annual Number of Divorced Persons who remarried.							
		Total.	Men.	Women.	Divorced men marrying spinsters.	Divorced men marrying widows.	Divorced men and women inter-marrying.	Divorced women marrying bachelors.	Divorced women marrying widowers.
1876–80 .. Average	554	104	56	48	42	12	4	31	15
1881–85 ..	671	128	68	60	53	12	6	42	15
1886–90 ..	707	169	80	89	65	11	8	65	20
1891–95 ..	744	214	110	104	89	15	12	75	23
1896–1900 ..	980	345	172	173	138	24	20	126	37
1901–05 ..	1,126	509	262	247	205	38	38	181	47
1906–10 ..	1,247	693	356	337	276	53	54	253	57
1911–15 ..	1,312	820	411	409	330	50	62	309	69
1916–20 ..	3,115	1,264	683	581	525	127	62	439	111
1911..	1,160	702	365	337	300	39	52	265	46
1912..	1,174	782	402	380	321	51	60	280	70
1913..	1,154	854	415	439	322	51	84	337	60
1914..	1,712	911	439	472	356	49	68	352	86
1915..	1,360	852	434	418	352	59	46	311	84
1916..	1,908	920	466	454	364	76	52	336	92
1917..	1,956	791	429	362	350	62	34	268	77
1918..	2,222	885	495	390	390	81	48	288	78
1919..	3,308	1,352	708	644	538	142	56	510	106
1920..	6,180	2,370	1,314	1,056	981	272	122	795	200
1921..	7,044	2,878	1,592	1,286	1,182	330	160	939	267
1922..	5,176	3,374	1,913	1,461	1,457	360	192	1,062	303

less than the record figure of 3,522, involving 7,044 persons, established last year as the result of a greatly stimulated increase in the divorce proceedings which followed the termination of the War.

From Table LXXII it will be seen that notwithstanding the decrease in divorces, there has been a further large increase in the number of persons who on remarriage described themselves as divorced. The increase in the remarriages has, however, proceeded more slowly than the increase in divorces, as might be expected having regard to the time interval which must elapse between divorce and subsequent remarriage. And whereas a few years ago the numbers of divorced males and females remarrying were about equal, there is now considerable male excess. But it must be borne in mind that these numbers may understate the facts, owing to misdescription of status in the registers.

At the 1921 Census an attempt was made for the first time in this country to ascertain the number of divorced persons in the population, the description being applied to both parties to the separation irrespectively of whether they had been applicants or respondents in the actual divorce proceedings. The numbers so enumerated, viz., 16,682 or 8,464 men and 8,218 women, were however little more than half the numbers which might reasonably have been expected from the divorce records of past years and there seems no doubt that the fears originally felt regarding the success of this innovation were fully justified and that a large number of persons have failed to return the desired information. Whether the degree of misstatement at subsequent remarriage bears any relation to that present in the Census figures, and whether therefore comparison of the marriages with the population in this class give a reliable expression of its marriage rate, it is impossible to say. That such rate would be high follows from the fact that many divorces are obtained in anticipation of and for the purpose of early remarriage, and it is of interest, if only as a matter of record, to note that the recorded remarriages of divorced males in 1921 were about three times as numerous as those which would have occurred if the all male marriage-rate shown in Table LXVIII had applied to the male population returned as divorced, while in the case of females, though the remarriages were fewer than those of the males, the number is three and a-half times the expected.

In Table P are given certain particulars concerning the marriages in respect of which suits for dissolution or annulment were commenced during the year. These figures published in the Statistical Review for the first time in 1921 are in continuation of similar statistics which, up to that year, appeared in the Civil Judicial Statistics, issued by the Home Office.

It will be seen from this Table that in the current year the most frequent duration of marriage at which dissolution proceedings were begun is from 5–10 years with an average of 151

for each of those years of duration, but the maximum is not strongly marked, for this period only accounts for 31 per cent. of the cases, there being 18 per cent. of shorter duration, while in 51 per cent. the marriages have subsisted for 10 years or more. More than 40 per cent. of the marriages in question were childless, and in a further 29 per cent. there was one child only.

BIRTHS.

The births registered during 1922 numbered 780,124, corresponding to a birth-rate of 20·4 per 1,000 of the population living.

The number of births quoted is 68,690 less than those of 1921, a diminution of 8·1 per cent., while the rate for the year is, with the exception of the worst of the years affected by the war, viz., 1917, 1918 and 1919, during which it was unusually depressed, the lowest on record. The fall, for a single year, is much in excess of any to which we have been accustomed in normal periods, though it is not so great as that which occurred between 1920 and 1921. The year 1920 with a rate of 25·5 per 1,000, it will be remembered, marked the climax of the temporary spurt in the birth-rate which immediately followed demobilization and this has been followed by a decline to 22·4 in 1921 and to 20·4 in 1922. Two successive falls of such magnitude, followed as they have been by a further decline in 1923, serve mainly to mark the violence of the disturbance caused by the war in this principal source of population recruitment ; until by the passage of time, it is clear that the temporary features of this disturbance have passed away and conditions become more stable, it will be difficult to discern from them the more permanent tendencies which the future has in store. The birth-rate in this country attained its highest values during the period 1865–1880, when it exceeded 35 per 1,000 population, and from that time it diminished by gradual and practically continuous stages to 23·8 in 1914 ; now that it has practically reached the 20 mark, even if the decline is arrested and the rate possibly given an upward tendency with an improvement in economic conditions, the likelihood of a return to the rates of the pre-war period appears at the present time to be very remote.

The crude birth-rate, or ratio of births to population of all ages, is the appropriate form of statement when the object in view is to record the net result of the various factors governing reproduction—proportionate number of potential mothers, the number of those who are married, their age and fertility in relation to age, etc. It sums up the effects of all the influences governing the rate at which the community is reproducing itself and is, therefore, in conjunction with corresponding form of mortality statement, the crude death-rate, the appropriate means of measuring natural increase. The number of births in the country, however, depends mainly upon the number of married women at

the reproductive ages, and as they form less than one-eighth of the total population the variation of their numbers and ages over a period of time may be different from that of the whole population in which case the crude birth-rates would form a very imperfect measure of the changes in fertility, *i.e.*, of the rate of reproduction in proportion to the opportunity of reproduction. In the absence of any knowledge of the constitution of the general population the crude rate is often used as an index of fertility, but always on the implied assumption of a fixed proportion of potential mothers, an assumption which may only reasonably be made in respect of short periods of adjacent years.

Now that the details of the 1921 Census are available it is possible to examine the constitution of the present population, and this is shewn, so far as it is relevant to fertility, in the following table in which comparative figures are also given in respect of five preceding censuses going back to the period at which the very high birth-rates referred to in an earlier paragraph were operating.

Table LXXIII.—England and Wales.—Distribution of Female Population of Reproductive Age, 1871–1921.

Census Year.	Women 15–45 per 1,000 total population of all ages.	Married women in 1,000 female population 15–45.	Married women 15–45 in 1,000 total population of all ages.	Age distribution of 1,000 married women between 15–45.				Age distribution of 1,000 unmarried (i.e. Single and widowed) women 15–45.			
				15–	20–	25–	35–45	15–	20–	25–	35–45
1871 ..	231	496	115	13	139	455	393	402	262	215	121
1881 ..	231	491	113	11	137	456	396	410	267	206	117
1891 ..	238	471	112	9	128	460	403	399	270	218	113
1901 ..	250	468	117	7	118	468	407	374	278	229	119
1911 ..	249	477	119	5	94	460	441	353	270	245	132
1921 ..	250	485	121	7	100	431	462	358	255	238	149

From the first two columns it will be seen that while the percentage of women aged 15–45 in the country which was 23·1 per cent. in 1871 and 1881 rose to 25·0 in 1901, at which point it has remained practically stationary up to the present time, the proportion of these who were married and who in the period under review have provided about 95 per cent. of the total births, progressively decreased until 1901 and increased thereafter; the two movements combined resulted in a decrease of the married women between 15–45 in the whole community from 11·5 per cent. in 1871 to 11·2 in 1891 and a continuous rise from that period to 12·1 per cent. in 1921.

In addition to the variation of the proportions of married women regard must also be had to the changes in their ages within the period 15–45; perhaps the most remarkable feature of the table is the decrease in the proportions at the youngest and most fertile ages down to 1911: for each 1,000 wives aged 15–45, in 1871 152 had not reached age 25, whereas in 1911 the corresponding number was 99 only, and though this has now increased to 107 the numbers between 25 and 35 have decreased

from 460 to 431, while those in the least fertile period of all have increased from 441 to 462. These changes have been brought about mainly by the general ageing of the population coupled with the reduction in the marriage-rates referred to in a previous section, and assisted also by the deliberate postponement of the date of marriage in some cases.

But whatever the reason for the changes in the age distribution of those married women, their importance in relation to the number of children born will be seen by reference to Table LXXIV, in which an attempt, for the first time in the course of these official reports, has been made to classify the births, according to the mothers' age and thereby gain some evidence of the varying intensity of fertility at different age periods of the mother. The classification is not a direct one, that is to say the information relating to the several births has not been obtained from what might be expected to be the natural source of such information, the birth register itself ; the system of birth registration in this country, which has been retained in its present form from the date of its inception, nearly 90 years ago, is quite inadequate for the purpose ; beyond the bare identification of the mother in the birth record, no particulars are available as to her age, the date of her marriage, the number of existing children, and other information all of which is essential for an accurate and continuous examination of the changes in fertility from time to time.

In respect of legitimate children and therefore legitimate fertility, however, it has been found possible to make use of some of the material provided by the 1921 Census. One of the questions on the Census schedule asked, in respect of each married man, the number and ages of all his living children and step-children under the age of 16, and where the man was enumerated on the same schedule as his wife, which was the case with about 93 per cent. of the husbands, the replies enabled children of all ages under 16 to be related to their mother, the latter being also fully described on the schedule. From the information so obtained the ratio

$$\frac{\text{Number of children under 1 year of age.}}{\text{Total number of married women.}}$$

was formed for various ages of wives, and this, in view of the fact that children less than a year old represent survivors of the births which occurred in the 12 months immediately preceding the date of the Census, has been adopted as the basis of the fertility curve in respect of married women at ages one-half year less than at date of enumeration. The ratios were modified by a constant factor, so that when multiplied by the total married women enumerated at the several ages, the products should aggregate to the number of legitimate births registered in the calendar year 1921 ; the final ratios are shown in Table LXXIV, and the most cursory glance at the figures reveals the enormous difference in the incidence of fertility at the extreme ages there shown. Below

age 20 the chance of a married woman having a child within a year is shown to be nearly $\frac{1}{2}$, between ages 25 and 29 the chance has diminished by 50 per cent. to approximately $\frac{1}{4}$, ten years later it is little more than one-eighth, while in the oldest group shown, viz., 40–45, it is but 3 per cent., or about one-fourteenth of that shown for the youngest age group. When a change in the proportion of married women in one group may thus have an effect upon ensuing fertility fourteen times as great as an identical change in another group, the importance of age distribution of the potential mothers is at once manifest, and it must clearly be taken into consideration in a comparative analysis extending over several decades.

Table LXXIV.—England and Wales.—Legitimate and Illegitimate Natality by Age of Mother, 1921.

Age Last Birthday.	Legitimate Births per 1,000 Married Women.	Illegitimate Births per 1,000 Spinsters and Widows.
15–	447	7·65
20–	359	15·14
25–	268	8·71
30–	197	0·78
35–	131	—
40–45	32	—

Similar fertility curves are not available for earlier census years' but an integral comparison with 1921 is shown in Table LXXV for each Census year back to 1871, and is contrasted in that table with the more familiar and more approximate comparisons given by the cruder birth-rates, whether calculated per 1,000 total population or per 1,000 married women between ages 15 and 45. The new comparisons have been obtained by multiplying the fertility rates at ages in Table LXXIV by the numbers of married women exposed to risk at these ages at the several censuses, thereby providing an " expected " or standard number of births—the number which would have occurred had the 1921 fertility rates been operating—and with the numbers so obtained are compared the actual numbers registered. Thus, in 1871, 1,504 legitimate births were recorded for every 1,000 that would have occurred under existing fertility rates, the present rates being in the aggregate only two-thirds of what they were 50 years ago. From that time the rates diminished steadily and progressively as shown by the comparative figures, which are 1,481, 1,382, 1,250, and 1,102 at successive ten-year intervals between 1881 and 1911. A noteworthy and somewhat unexpected feature brought out in Table LXXV is that both for the legitimate and illegitimate birth comparisons, the crude birth-rates based upon the total population have in the period under review provided

a better index to the changes in fertility than what has always been assumed to be a better method of comparison, that which relates the births to the married or single women of child-bearing ages alone. The effect of the changes in the proportion of these women in the total population has been partially neutralized by their increase in age and the elimination of one of the variables only has worsened rather than improved the comparisons.

A reservation should, perhaps, be added in regard to the basic fertility rates derived from the Census data. As stated above, the children enumerated as belonging to the several classes of married women included step-children and possibly

Table LXXV.—England and Wales.—Birth-rates and Fertility, 1871–1922.

	1871 (1870–1872).	1881 (1880–1882).	1891 (1890–1892).	1901 (1900–1902).	1911 (1910–1912).	1921 (year 1921 only).	1922
Legitimate Births.							
Births per 1,000 total population .. .. — No. ..	33·3	32·3	29·4	27·5	23·4	21·4	19·5
— *Ratio to 1921*	*1,556*	*1,509*	*1,374*	*1,285*	*1,093*	*1,000*	*911*
Births per 1,000 married women 15–45 .. .. — No. ..	292·5	286·0	263·8	235·5	197·4	176·3	—
— *Ratio to 1921*	*1,659*	*1,622*	*1,496*	*1,336*	*1,120*	*1,000*	—
Ratio of actual births to those which would have occurred had the 1921 age rates (Table LXXIV) been operating.	*1,504*	*1,481*	*1,382*	*1,250*	*1,102*	*1,000*	—
Illegitimate Births.							
Births per 1,000 total population .. .. — No. ..	1·96	1·65	1·31	1·12	1·03	1·02	0·89
— *Ratio to 1921*	*1,922*	*1,618*	*1,284*	*1,098*	*1,010*	*1,000*	*873*
Births per 1,000 unmarried women 15–45 — No. ..	17·0	14·1	10·5	8·5	7·9	7·9	—
— *Ratio to 1921*	*2,152*	*1,785*	*1,329*	*1,076*	*1,000*	*1,000*	—
Ratio of actual births to those which would have occurred had the 1921 age rates (Table LXXIV) been operating.	*2,051*	*1,688*	*1,247*	*1,008*	*968*	*1,000*	—
All Births.							
Births per 1,000 total population .. .. — No. ..	35·3	34·0	30·7	28·6	24·4	22·4	20·4
— *Ratio to 1921*	*1,576*	*1,518*	*1,371*	*1,277*	*1,089*	*1,000*	*911*
Ratio of actual births to those which would have occurred had the 1921 age rates (Table LXXIV) been operating.	*1,527*	*1,490*	*1,376*	*1,238*	*1,095*	*1,000*	—

adopted children, and these in the present analysis will have been related to married women of a possibly different age constitution from that of their own natural mothers. Again, the children under one year of age at the date of the Census will have been on average about six months old, and will accordingly only represent that portion of the births of the preceding year which survived the comparatively high mortality operating in the first months of life, while further the married women for whom the facts were forthcoming represent only a sample, though a very large one, of the total married women of the several ages in the whole population. Altogether, it is believed that these defects are not

important, and that the final modification of the rates by means of the constant factor referred to succeeds in providing a substantially accurate picture of the 1921 incidence of fertility among married women.

Illegitimate Births.—The births registered during 1922 include 34,138 of illegitimate children, a fall of 4,480 from the number in 1921, coincident with the decrease of 68,690 in total births. Illegitimate births have thus decreased by 11·6 per cent., while legitimate births have decreased by 7·9 per cent. As a result of these changes, the proportion of illegitimate to total births, which had risen from a minimum of 3·95 per cent. in 1901–1905 to 6·26 per cent. in 1918, in consequence of the great reduction in legitimate without any corresponding reduction in illegitimate births before 1918, and a definite increase in their number in that year (Table B), has now declined to 4·38 per cent.

It will have been observed from Tables LXXIV and LXXV that, in addition to the crude rate comparison an attempt has been made to allow for the age incidence of the potential mothers in respect of illegitimate as well as legitimate births. The age factors adopted and shown in Table LXXIV have, however, no foundation in either the Census or Registration Records available in this department. At the Census the question of illegitimacy was, on grounds of public policy, carefully avoided both in the printed schedules and in all personal communication with those responsible for filling them up, and as regards birth registration while the fact of illegitimacy is known, the age of the mother remains, in common with all birth registrations in this country, unrecorded and unknown. The rates adopted have, therefore, in the absence of any better authority, been based on those used by the Government Actuary and the Ministry of Health in the assessment of the maternity risk and benefit to unmarried women for the purpose of National Health Insurance. The rates were adopted on the advice of an influential actuarial committee, and serve in the present connection to complete the tables on the lines followed and already described for married women. The Table LXXIV rates were obtained from the basic rates by constant factor modification so as to produce, when multiplied by the appropriate numbers of single and widowed women, the number of illegitimate births registered in the calendar year 1921, and the comparative figures derived therefrom in Table LXXV may probably be accepted as an improvement upon the crude rate comparisons shown in the same table.

Birth-rates of Different Parts of the Country.—The birth-rates of individual administrative areas tabulated in Table E are summarized in Tables LXXVI and LXXVII, total births in the former and illegitimate only in the latter (*see* footnote to Table E).

The method employed in earlier paragraphs for comparing the fertility of England and Wales in different years by the use of a

standard fertility curve applies equally well of course to the comparison of fertility in different sections of the population of which the sex, age and marital condition constitution is known, and the tables dealing with local birth-rates, hitherto limited of necessity to the cruder forms of comparison, have this time been amplified by the addition of a series of figures showing the ratio of the actual births in each section of the country in 1921 to the number expected by the application of the average rates operating in the country as a whole (*see* Table LXXIV).

For this purpose Tables LXXVI and LXXVII are shewn each in four sections, the first and fourth giving the crude rates per 1,000 total population for 1921 and 1922 respectively, the second portion shewing the ratio of the crude sectional rate to that of the whole country for 1921 and the third giving the similar but more accurate comparison obtained by applying a standard fertility curve in the manner explained.

Table LXXVI.—England and Wales and Sections of the Country.—Total Birth-rates 1921 and 1922.

——	England and Wales.	North.	Midlands.	South.	Wales.
1921. Total Births per 1,000 total Population, 1921.					
All Areas	22·4	23·7	22·2	20·4	25·0
London	22·1	—	—	22·1	—
County Boroughs ..	23·5	24·0	23·6	19·8	24·9
Other Urban Districts	22·1	23·1	21·6	18·9	26·7
Rural Districts ..	21·4	23·7	21·2	19·1	22·6
1921. Ratio of Rate per 1,000 to Rate for England and Wales, 1921.					
All Areas	1,000	1,058	991	911	1,116
London	987	—	—	987	—
County Boroughs ..	1,049	1,071	1,054	884	1,112
Other Urban Districts	987	1,031	964	844	1,192
Rural Districts ..	955	1,058	946	853	1,009
1921. Ratio of Actual Births to those which would have Occurred had the 1921 Age Rates (Table LXXIV) been operating.					
All Areas	1,000	1,025	999	941	1,099
London	957	—	—	957	—
County Boroughs ..	1,004	1,026	1,000	887	1,035
Other Urban Districts	978	996	964	898	1,101
Rural Districts ..	1,060	1,099	1,054	994	1,143
1922. Total Births per 1,000 total Population, 1922.					
All Areas	20·4	21·3	20·3	19·1	21·9
London	20·9	—	—	20·9	—
County Boroughs ..	21·4	21·9	21·3	18·5	21·5
Other Urban Districts.	19·8	20·4	19·8	17·4	22·8
Rural Districts ..	19·7	21·4	19·7	18·0	20·6

Table LXXVII.—England and Wales and Sections of the Country.—Illegitimate Birth-rates, 1921 and 1922.

——	England and Wales.	North.	Midlands.	South.	Wales.
1921. Illegitimate Births per 1,000 total Population, 1921.					
All Areas	1·02	1·12	1·00	0·92	1·03
London	0·89	—	—	0·89	—
County Boroughs ..	1·09	1·15	1·04	1·04	0·77
Other Urban Districts.	0·96	1·04	0·91	0·91	1·02
Rural Districts ..	1·07	1·17	1·07	0·92	1·22
1921. Ratio of Rate per 1,000 to Rate for England and Wales, 1921.					
All Areas	1,000	1,098	980	902	1,010
London	873	—	—	873	—
County Boroughs ..	1,069	1,127	1,020	1,020	755
Other Urban Districts.	941	1,020	892	892	1,000
Rural Districts ..	1,049	1,147	1,049	902	1,196
1921. Ratio of Actual Illegitimate Births to those which would have Occurred had the 1921 Age Rates (Table LXXIV) been operating.					
All Areas	1,000	1,091	992	877	1,108
London	788	—	—	788	—
County Boroughs ..	1,034	1,091	975	1,030	751
Other Urban Districts.	944	1,030	869	864	1,134
Rural Districts ..	1,197	1,257	1,234	1,029	1,320
1922. Illegitimate Births per 1,000 total Population, 1922.					
All Areas	0·89	0·95	0·87	0·85	0·88
London	0·86	—	—	0·86	—
County Boroughs ..	0·92	0·98	0·84	0·93	0·72
Other Urban Districts.	0·83	0·88	0·82	0·78	0·84
Rural Districts ..	0·97	1·03	0·99	0·86	1·06

As regards the crude rates, it will be seen that for 1922, the general diminution in births has been common throughout all of the areas and sections shown in the table. Generally speaking, the fall has been greatest where the rates were high and where there was a greater opportunity for a fall as in the Welsh areas, and least in the converse circumstances, e.g., the South of England. Variations in the amount of the fall have not, however, disturbed the order of the several geographical divisions; this has been maintained with great constancy year after year, as shewn in the following table, which states the birth-rate of each section as a percentage of that of the whole country for each year from 1913 onwards.

Table LXXVIII.—Birth-rate of Different Sections of the Country per cent. of that of England and Wales, 1913–22.

——	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
North ..	105	107	104	102	104	106	105	103	106	104
Midlands..	99	98	98	100	98	98	97	100	99	100
South ..	91	90	93	96	94	90	93	96	91	94
Wales ..	113	113	114	111	115	122	112	105	112	107

But the chief interest in Tables LXXVI and LXXVII must lie in the contrast they bring out between comparisons based on the crude rates and those shewn by the more accurate method of the third section of the tables. Taking the four geographical units alone, it will be seen that while they retain the same relative position in respect of total births, by the completer comparison now introduced, the fluctuations are not nearly so great as would appear from the crude rates hitherto accepted for the purpose of these reports. Thus in the North where the crude rate shews an excess of 5·8 per cent., the later method reduces this to 2·5 per cent., and in Wales the excess is reduced from 11·6 to 9·9 per cent. On the other hand, in the Midlands and South, which are both below normal, the deficiencies are cut down by the new method from 0·9 to 0·1 and 8·9 to 5·9 per cent. respectively. When the geographical units are further analysed according to degree of urbanization, in eight out of the thirteen divisions identified, the variations from normal are shewn to have been aggravated in the crude rate comparisons by peculiarities of the constitution of their populations, while only in three, viz., London and the rural districts of the North and of Wales, is the difference the other way, the form of the population being such as to mask the full abnormality of the birth-rate. If, however, the areas be examined from the point of view of urbanization, the change is a much more remarkable one. By the crude rates the births in rural districts were not only below normal but were lower than in either class of urban area, whereas from the point of view of fertility they are now shewn to be the most productive of all areas not only for the country as a whole, but for each of the geographical sections. London, on the other hand, which hitherto ranked with the smaller towns at a level of 1·3 per cent. below the average of England and Wales is now placed lowest at a point 4·3 per cent. below normal. In the South of England and in Wales, fertility apparently decreases progressively with urbanization, but in the North and Midland areas while the rural districts have the highest rates, the positions of the large and small towns are reversed, the latter shewing the rather more unfavourable positions.

The extent of illegitimacy in different classes of area and parts of the country may be gathered from Table LXXVII. The

distribution shewn in the third portion of that table is much the same as that of all births, though the fluctuations are considerably wider throughout ; the highest rates occur in the rural districts, but whereas for all births the rural aggregate rate is 6·0 per cent. above the mean, for illegitimate only it is 19·7 per cent. above ; London, on the other hand, is 21·2 per cent. below the mean in regard to illegitimacy as compared with 4·3 per cent. for all births. The table confirms generally the view expressed in earlier reports, when only crude rate comparisons were available, that such rates understated the position in rural districts and overstated it in the South.

Sex Proportions at Birth.—Births of males in England and Wales numbered 399,459, and those of females 380,665 ; the proportion of male to female births was 1,050, 1,040 and 1,049 to 1,000 for legitimate, illegitimate and total births respectively. The corresponding proportions for total births in each year from 1882 onwards and in groups of years since the commencement of registration are shewn in Table C ; the extreme range during the preceding 50 years was from 1,032 per 1,000 in 1898 to 1,060 in 1919. During this period the highest ratio recorded prior to the war was 1,043 in 1875. It will be seen that the exceptional preponderance of male births has fallen somewhat from its maximum attained during 1919, though it still remains much above its pre-war level.

The extent to which different classes of area or portions of the country have contributed to the increased preponderance of male births is shewn in Table LXXIX.

Table LXXIX.—Male Births per 1,000 Female Births, 1922.

———	England and Wales.	North.	Midlands.	South.	Wales.
All Areas	1,049	1,050	1,048	1,049	1,054
London	1,039	—	—	1,039	—
County Boroughs ..	1,053	1,051	1,051	1,067	1,052
Other Urban Districts	1,051	1,052	1,048	1,051	1,058
Rural Districts ..	1,047	1,039	1,043	1,061	1,049

As in previous years the great increase in excess of male births is common to the four sections of the country distinguished, but contrary to the general experience of this country in other years and of other countries, the ratio is usually lower in the rural districts than it is in the towns, though, as has been remarked on earlier occasions, there is so much variability in the relative experience in this matter that the figures of a single year afford no reliable guide to the ascertainment of any characteristic differences.

NATURAL INCREASE.

In 1922 the excess of births over deaths registered in England and Wales was 293,344, as compared with 390,185 in 1921, 491,652 in 1920, and 188,235 in 1919.

The reduction of 96,841 from last year's figures results principally from the fall in the birth-rate, aggravated by a further loss on account of the increase in mortality, viz., from 12·1 in 1921 to 12·8 in 1922. The numerical excess of births over deaths is low in comparison with pre-war years even with those of the more remote period when the population was little more than half of its present figure, as shewn in the following table, which gives the natural increase per 1,000 total population for a series of years from 1876.

Table LXXX.—Natural Increase of Population per 1,000 living, 1876-1922.

———	Mean Annual Birth-rate per 1,000 living.	Mean Annual Death-rate per 1,000 living.	Mean Annual Rate of Increase by excess of Births over Deaths per 1,000 living.
1876—1880.. ..	35·3	20·8	14·5
1881—1885.. ..	33·5	19·4	14·1
1886—1890.. ..	31·4	18·9	12·5
1891—1895.. ..	30·5	18·7	11·8
1896—1900.. ..	29·3	17·7	11·6
1901—1905.. ..	28·2	16·0	12·2
1906—1910.. ..	26·3	14·7	11·6
1911—1915* ..	23·6	14·3	9·3
1916—1920* ..	20·1	14·4	5·7
1906..	27·2	15·5	11·7
1907..	26·5	15·1	11·4
1908..	26·7	14·8	11·9
1909..	25·8	14·6	11·2
1910..	25·1	13·5	11·6
1911..	24·3	14·6	9·7
1912..	23·9	13·3	10·6
1913..	24·1	13·8	10·3
1914..	23·8	14·0	9·8
1915*	21·9	15·7	6·2
1916*	20·9	14·4	6·5
1917*	17·8	14·4	3·4
1918*	17·7	17·6	0·1
1919*	18·5	13·7	4·8
1920	25·5	12·4	13·1
1921..	22·4	12·1	10·3
1922..	20·4	12·8	7·6

*The rates for the years 1915–1919 are based upon populations specially estimated for this purpose.

Table LXXXI similarly shews for 1922 the rate of natural increase in various sections of the country, and is the resultant effect of the several sectional birth and death-rates already discussed.

Table LXXXI.—Natural Increase per 1,000 living, 1922.

——	England and Wales.	North.	Midlands.	South.	Wales.
All Areas	7·6	7·9	8·3	6·2	8·9
London	7·4	—	—	7·4	—
County Boroughs ..	8·0	7·9	8·9	5·4	8·3
Other Urban Districts	7·5	7·3	8·3	5·3	10·3
Rural Districts ..	7·4	9·3	7·6	5·8	7·1

UNITED KINGDOM.

Population.—The first complete census of the United Kingdom was taken in 1821, when the population numbered 20,893,584 persons; during the 100 years 1821–1921 this number has increased by about 126 per cent., the sum of the final census figures for Great Britain and of the estimated population of Ireland in June, 1921, amounting to 47,263,196.

The estimated populations of the several divisions of the United Kingdom in 1922 (*see* also Table A) are as follows :—

Table LXXXII.—Population in the Middle of the Year 1922.

	Persons.	Males.	Females.
England and Wales	38,158,000	18,225,000	19,933,000
Scotland	4,904,456	2,358,201	2,546,255
Irish Free State	3,160,000	1,594,000	1,566,000
Northern Ireland	1,284,000	628,000	656,000

Marriages.—The marriages in the United Kingdom during the year 1922 numbered 357,131, corresponding to a rate of 15·0 persons married per 1,000 of the total population.

This rate was 1·2 per 1,000 below the corresponding rate in 1921, and 1·0 per 1,000 below the average rate in the ten years 1912–1921.

Table LXXXIII.

	Marriages, 1922.	Persons Married per 1,000 living.	
		Ten Years, 1912–1921.	1922.
England and Wales	299,524	16·7	15·7
Scotland	34,394	15·2	14·0
Irish Free State	15,141	9·9	9·6
Northern Ireland	8,072	12·8	12·6
United Kingdom ..	357,131	16·0	15·0

Births.—The births registered in the United Kingdom in the year 1922, numbered 983,589, and were in the proportion of 20·7 per 1,000 of the total population.

This rate was 1·8 per 1,000 below the corresponding rate in 1921, and 1·1 per 1,000 below the average in the 10 years 1912–1921.

Table LXXXIV.

	Births, 1922.	Births per 1,000 living.	
		Ten Years, 1912–1921.	1922.
England and Wales	780,124	21·7	20·4
Scotland	115,085	24·0	23·5
Irish Free State	58,849	20·7	18·6
Northern Ireland	29,531	23·0	23·0
United Kingdom ..	983,589	21·8	20·7

Deaths.—The deaths registered in the United Kingdom in the year 1922 numbered 624,027, and were in the proportion of 13·1 per 1,000 of the total population.

This rate was 0·6 per 1,000 above the corresponding rate in 1921, but was 1·4 per 1,000 below the average in the 10 years 1912–1921.

Table LXXXV.

	Deaths, 1922.	Deaths per 1,000 living.	
		Ten Years, 1912–1921.	1922.
England and Wales	486,780	14·1	12·8
Scotland	72,905	15·2	14·9
Irish Free State	44,547	16·1	14·1
Northern Ireland	19,795	17·6	15·4
United Kingdom ..	624,027	14·5	13·1

Infant Mortality.—The following Table shows the proportion of deaths of infants under one year of age to 1,000 births in each division of the United Kingdom.

Table LXXXVI.

	Deaths under 1 year per 1,000 Births.	
	1912–1921.	1922.
England and Wales	95	77
Scotland	104	101
Irish Free State	82	69
Northern Ireland	97	77
United Kingdom	96	79

BIRTHS AND DEATHS AT SEA.

Marine Register Book.—In accordance with the Births and Deaths Registration Act of 1874 and the Merchant Shipping Act of 1894, Commanding Officers of ships trading to or from British ports are required to transmit returns of all births and deaths occurring on board their ships to the Registrar-General of Shipping and Seamen, who furnishes certified copies of such returns to the Registrars-General of Births and Deaths for England, Scotland, and Ireland. Similar returns are furnished to the Registrars-General of Births and Deaths by Officers in charge of His Majesty's ships. These returns of births and deaths at sea constitute the "Marine Register Book." During the year 1922 this register was increased by the addition of 151 entries of birth and 2,296 entries of death.

REGISTRATION OF BIRTHS, DEATHS AND MARRIAGES.

Progress of Registration.—The names in the alphabetical indexes of births, deaths and marriages recorded in the national registers of England and Wales were increased during the year 1922 by 1,865,952, this addition raising the total of names in the indexes, which at the end of 1922 embraced a period of 85½ years, to 143,862,434 (Table S).

Searches and Certificates.—Besides the certified copies of the registered births, deaths and marriages kept in England and Wales pursuant to the Registration Acts, a large number of other registers and records are deposited in this Office under statute

or other arrangement. A list of these various registers and records will be found on pages xxix–xxxii of the Annual Report for 1895. Searches may be made in any of these registers, and certificates obtained on payment of the prescribed fees.

Table LXXXVII affords an indication of the extent to which the copies of the records kept in this Office have been utilized by the public for legal evidence of births, deaths and marriages since 1866.

Table **LXXXVII.**

Years.	Total Searches.	Gratuitous Searches.	Searches paid for by Fees.	Certificates Issued.	Amount Received.
					£ s. d.
1866 (52 weeks)	12,135	—	12,135	10,017	1,860 15 6
1875 (52 weeks)	26,356	—	26,356	20,282	3,879 15 6
1885 (52 weeks)	36,450	—	36,450	27,682	5,317 13 6
1895 (52 weeks)	53,289	—	53,289	35,727	7,200 12 6
1905 (52 weeks)	65,142	—	65,142	50,310	9,611 9 0
1906 (52 weeks)	64,340	—	64,340	49,429	9,458 6 0
1907 (52 weeks)	69,249	—	69,249	53,058	10,194 9 0
1908 (53 weeks)	72,370	—	72,370	54,870	10,550 8 0
1909 (52 weeks)	132,169	58,626*	73,543	54,674	10,568 8 0
1910 (52 weeks)	126,716	51,347	75,369	57,019	10,939 5 6
1911 (52 weeks)	140,496	65,491	75,005	56,347	10,875 6 0
1912 (52 weeks)	149,752	69,151	80,601	61,143	11,752 6 0
1913 (52 weeks)	150,540	71,225†	79,315	60,356	11,613 19 0
1914 (53 weeks)	188,040	104,593	83,447	65,817	12,482 11 6
1915 (52 weeks)	202,939	118,788	84,151	69,746	13,007 10 0
1916 (52 weeks)	303,334	197,669	105,665	88,265	16,379 17 0
1917 (52 weeks)	272,199	177,403	94,796	80,374	14,859 14 0
1918 (52 weeks)	255,462	146,504	108,958	90,898	16,889 0 0
1919 (52 weeks)	301,913	170,670	131,243	107,067	20,017 14 6
1920 (53 weeks)	284,194	149,447	134,747	108,684	20,415 0 0
1921 (52 weeks)	258,461	131,167	127,294	99,911	18,949 10 6
1922 (52 weeks)	263,047	143,088	119,959	90,400	19,028 12 6

* Including some searches made in 1908.

† In addition, there were 91,917 gratuitous searches for National Insurance Audit purposes.

The 143,088 gratuitous searches during 1922 include 75,022 searches made in the Birth Records for the purpose of verifying the ages of persons claiming old-age pensions, 13,466 searches in the Census Records of 1861 for the same purpose ; 46,389 made to assist dependents of men serving with H.M. Forces to produce evidence of marriage and of the births of children in connection with claims to Naval and Military Pensions, Separation Allowances, etc., and to verify the ages of certain classes of youths and men in connection with service in the Army, Navy, and Air Force, and 8,211 made for other public purposes.

Offences against the Registration Acts.—In 1922 four persons, on prosecution by order of the Registrar-General, were convicted of offences in connection with registration. The offences for which convictions were obtained were as under :—

(*a*) Giving a false age when registering the death of an old-age pensioner 2
(*b*) Failing to register a birth within 42 days 1
(*c*) Failing to comply with a requisition to register a birth 2

In addition to the above cases proceedings were taken and convictions obtained by the Director of Public Prosecutions in cases reported through the Registrar-General where parties made false declarations when giving notice of marriage.

PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS.

In Tables T and U of Part II of the Statistical Review, 1922, are shown the numbers of males and females on the Register of Electors compiled under the Representation of the People Act, 1918, in respect of the qualifying period of six months ending on the 15th June, 1922.

The first return of electors on the Registers prepared after the passing of that Act was issued in 1919 by the Home Office (Parliamentary Paper No. 138 of Session 1918), and this was followed by a further similar return in 1920 (Parliamentary Paper No. 242 of Session 1919) in respect of the third Register, prepared for the qualifying period ending on the 15th June, 1919. In both returns statistics were given of the Parliamentary and Local Government electors in respect of each Parliamentary constituency in the United Kingdom.

In addition to these returns, the numbers of the Parliamentary electors, male and female, on the Spring Register for 1921, prepared for the qualifying period ending on 15th December, 1920, were published for each Parliamentary County, Borough and Division in England and Wales, side by side with their respective total populations, in the Preliminary Report of the 1921 Census for England and Wales. The comparison of electorate with total population has been further extended in the substantive Census reports by the addition of columns showing the ratio of electors of each sex to the population in the several age periods (21 and over in the case of males and 30 and over in the case of females), governing the franchise under the Act, the electorate used for these more detailed comparisons being that of the Autumn Register for 1921.

The particulars issued in Part II of the present Statistical Review, in respect of the Autumn Register for 1922, have been taken from statements furnished to the Registrar-General by the Registration Officers of the several areas, or in the case of a University forming the whole or part of a University constituency, by the Chancellor, Registrar or other officer dealing with Parliamentary registration.

The expressions "Parliamentary electors," "Local Government electors," and "persons on absent voters list," have in the tables the same meaning as in the Act. The expression "men registered for business premises qualification," means men who are qualified to be registered as occupiers of business premises and are not resident in the qualifying premises.

The Registration Officers were instructed to enter in the statements from which the Return has been compiled the total number of names on the Register without any deduction in respect of persons who are registered in more than one Parliamentary or Local Government constituency, and further, to take care to secure that the names of "out voters" (that is, persons whose names appear twice in the Register, by reason of a claim under Rule 24 of the First Schedule to the 1918 Act) should be counted once only.

Table T refers to Parliamentary electors, and shows for each Parliamentary constituency in England and Wales, including the University constituencies, the number of males and females on the Register, and also the numbers registered in respect of business premises qualifications and the numbers on the absent voters list.

Table U refers to Local Government electors, and shows the numbers of each sex registered in respect of every sanitary area, i.e., County Borough, Metropolitan Borough, Municipal Borough, Urban District and Rural District in England and Wales.

The totals of the Autumn 1922 Registers are shown in the following summary in conjunction with the figures of previous Autumn Registers made since the passing of the 1918 Act.

England and Wales.

Register	Parliamentary Register (including University Constituencies).					Local Government Register.		
	Persons.	Males.	Females.	Men registered for business premises qualification. (included in Cols. *b and c*).	Persons on Absent Voters List (included in Cols. *b–d*).	Persons.	Males.	Females.
a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*k*
Autmn 1918	17,222,983	10,281,054	6,941,929	159,013	3,362,028	13,930,130	6,998,665	6,931,465
1919	17,465,638	10,234,887	7,230,751	205,461	1,157,061	14,361,123	7,176,019	7,185,104
1920	17,584,552	10,176,750	7,407,802	203,471	254,866	14,712,453	7,364,912	7,347,541
1921	17,795,784	10,237,344	7,558,440	194,737	185,227	15,019,348	7,527,861	7,491,487
1922	18,001,692	10,312,248	7,689,444	199,904	162,901	15,322,625	7,700,108	7,622,517

It will be observed that the total female electorate on the Parliamentary Register and both male and female on the Local Government Register have steadily increased with the increase in population since the passing of the 1918 Act. The male Parliamentary electorate has increased since 1920, but for earlier years a decrease is shown, due, as explained at greater length in

last year's report, to a special provision of the 1918 Act under which members of the fighting forces were exceptionally placed upon the register at the age of 19 instead of the normal age of 21. The consequence of this was that in the two years after demobilisation, the normal number of new entrants was diminished by the earlier registrations at a younger age and the residue was less than the lapses by death, etc. ; further, the earlier registers contained a certain amount of duplication which has been reduced with the successive revisions.

Including a certain amount of plural representation in the case of those persons registered in more than one constituency by reason of their possessing the necessary residence or business qualification, or being entitled to be registered in respect of a University constituency, the total Parliamentary electorate of 18,001,692 represents 47·2 per cent. of the estimated total population, or 56·6 per cent. of the male and 38·6 per cent. of the female population ; in the case of the rather more restricted Local Government franchise, the numbers are somewhat less and the proportions correspondingly lower, the total electorate being 40·2 per cent. of the whole population, or 42·3 per cent., and 38·2 per cent. in the case of males and females separately.

Of the total of the Parliamentary Registers, the bulk, viz., 17,962,318, represents the aggregate voting strength in the 509 geographical constituencies into which England and Wales is divided, the balance of 39,374 representing the five University constituencies. Eleven of the Boroughs, and three University constituencies, however, each return two members, so that the total representation in Parliament is by 528 members, 520 in respect of the geographical divisions, with an average electorate of 34,543 per member and eight in respect of the Universities, with an average electorate of 4,922.

MISCELLANEOUS.

Other tables appearing in Part II. of the Statistical Review which have not formed the subject of special comment in the foregoing pages are as follows :—

Table R, showing the balance inward or outward of passenger movement into and out of the United Kingdom for each of the years from 1903–1922.

Table W, showing the Area, Population, Births and Deaths in British Islands other than Great Britain and Ireland from 1902–1922.

Table X, showing the Population, Births, Deaths, Infant Mortality, Marriages and corresponding rates for the year 1922 in the several portions of the British Dominions :—

The Commonwealth of Australia.
Canada.
New Zealand.
South Africa.

Table Y, showing the 1921 Census Populations, and the intercensal rate of increase or decrease of the several Dominions, Colonies and Protectorates (including mandated territories) in the British Empire.

Table Z, showing the latest Census Populations and intercensal rates of increase or decrease in various Foreign Countries.

Table AA, showing the changes which have taken place in the boundaries of Administrative and Poor Law Areas in England and Wales during 1922.

METEOROLOGY OF THE YEAR 1922.*

A Cool Year.

The year 1922 was characterised by the hot spell in May and the continued low temperatures from June to November.

The weather of *January* was very changeable and wet with exceptionally large fluctuations in temperature. Gales and strong winds were of frequent occurrence, and occasioned much damage to shipping. Except for about a week of anticyclonic weather in the earlier part of the month, the weather of *February* was mild and variable, with occasional fair intervals. In the first week of *March* conditions continued mild and unsettled, with frequent strong winds and gales. Subsequently winds became northerly ; cold weather was experienced towards the end of the month, when there were frequent showers of sleet, snow, or hail. The rainfall for the month was generally below the normal. Vegetation was very backward for the time of year. *April* was conspicuous for its cold, the mean temperature being everywhere very low ; the mean minimum temperature was almost the same as that of the preceding January. Ground frost was recorded no less than 24 times at Renfrew, while temperatures on the grass below 15° F. occurred at various places on several occasions. At Meltham (Yorks) the mean temperature was almost as low as in 1917, and with that exception, the coldest April in 44 years. At Bolton (Lancs.) the month was the coldest April since 1887. The most notable feature of *May* was the hot spell which began about the 20th in the south-east and eastern parts of England. At Kew Observatory (Richmond, Surrey) the day maximum temperature reached 80° F. on three successive days, this being the highest temperature recorded for May during the last 50 years. On May 22nd at Camden Square (London) and May 24th at Greenwich, a maximum temperature of 91° F. occurred ; this was the highest recorded temperature in the British Isles in the year. Thunderstorms occurred in the beginning and towards the end of the month and were more frequent than in any other month. On May 21st exceptionally heavy hail accompanied a thunderstorm in Yorkshire and the stones are stated to have been as

* Furnished by the Director of the Meteorological Office.

large as walnuts. Thick fog in the Channel and Bay of Biscay was the occasion of the fatal collision of the "Seine" with the "Egypt" on the 20th. Warm sunny weather prevailed until about the middle of *June*, when cool and unsettled conditions set in. In marked contrast to the conditions which prevailed during July, 1921, the weather of *July* was cool and unsettled throughout. It was an exceptionally wet and dull month, with temperature much below the normal. Similar conditions were maintained throughout the greater part of *August*. Rainstorms occurred on the 6th and 7th, causing widespread floods in Nottinghamshire, Northamptonshire, and the south of Yorkshire. Throughout the greater part of *September* the weather was cool and unsettled. Rainfall was not greatly in excess, but sunshine was deficient. *October* was abnormally dry; in some parts of the West Midlands it was one of the driest months in living memory. The mean temperature was low, especially during the latter half of the month. The duration of sunshine was generally much above the normal, the second week being exceptionally fine, almost unbroken records being obtained at many English stations on successive days. The weather of *November* was for the most part quiet, cloudy and dry. There was much inland fog between November 11th and 25th, especially in the London area. Glasgow experienced a dense fog on the 20th. On the 21st the central parts of London experienced a remarkable gloom as the result of the formation of a pall of smoke about the height of the roofs of buildings. Intense darkness persisted throughout nearly the whole day, necessitating the employment of artificial illumination in the streets. The weather of *December* was mild. In the first part of the month conditions were quiet, but after the 18th a day seldom passed on which the wind did not attain gale force on some parts of the British coasts. Excessive rainfall occurred in most parts of England and Ireland.

Further information.—Tables relating to meteorological elements are given in Part I. (Tables 29–31). A description of the weather of each month appears in the Quarterly Return of the Registrar-General and a summary of the observations at Greenwich for each month of the year appears in Table XIV of the Return for the fourth quarter.

Charts showing the distribution of pressure, temperature, sunshine and rainfall for the year, together with summaries of the observations at numerous stations will be found in the Annual Summary of the Monthly Weather Report issued by the Meteorological Office.

A list of the publications of the Meteorological Office will be found in "List M" issued by H.M. Stationery Office.

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